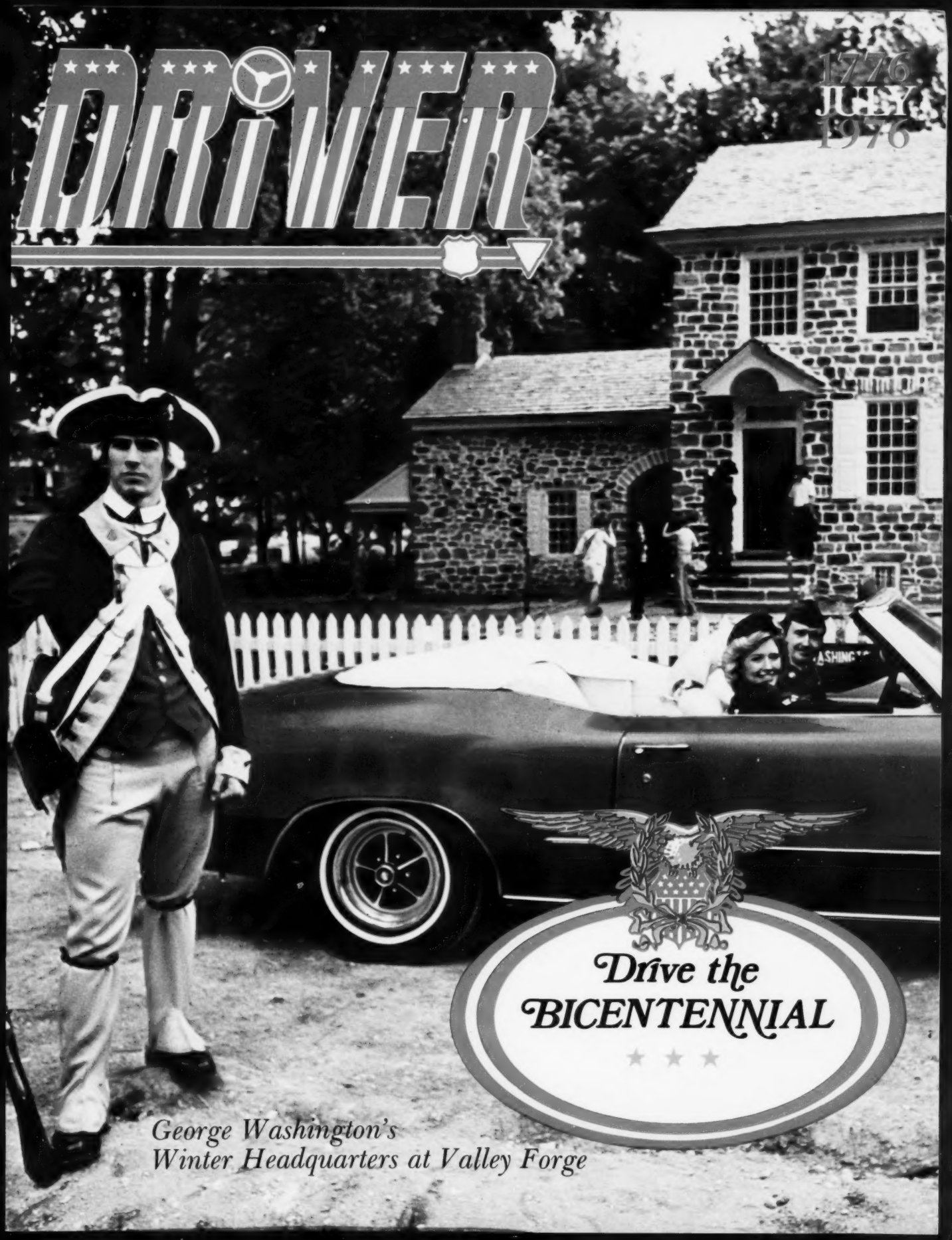

DRIVER
1776
JULY
1976
Drive the
BICENTENNIAL
George Washington's
Winter Headquarters at Valley Forge

During this Bicentennial season, it is appropriate that we remind ourselves of the deeds of those who helped fashion the freedom of this nation. It is equally necessary that we consider the challenges that await in the future—challenges that must be met and overcome if our independence is to endure.

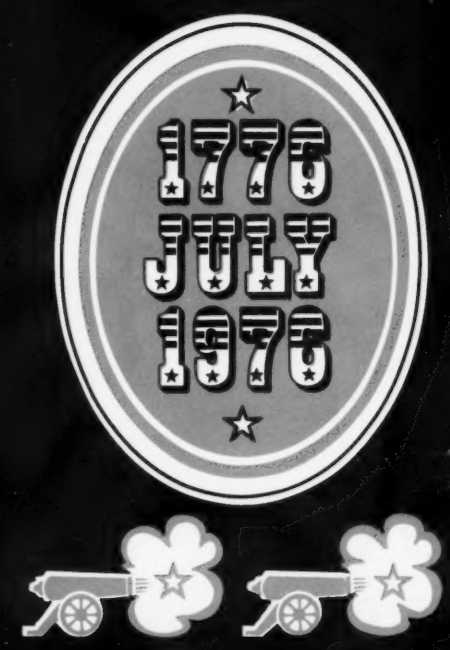
For the military man and woman, the future will be particularly demanding. In an era when our military capabilities and those of our prime adversary are about equal, the deciding factors will undoubtedly be the skill and dedication of our people. The care and precision with which our people apply their talents will determine how well our nation fares in the future.

Increasingly greater responsibilities are placed on young shoulders today, and these young men and women are proving worthy of this trust. The greater complexity and expense of modern weapon systems are placing added emphasis on good management and proper safety techniques—not only with the people who operate the equipment but also with our service and support people. We need everyone working together, with care and concern, to insure our security in America's third century.

Honorable Thomas C. Reed
Secretary of the Air Force

As we celebrate the 200th anniversary of our country, it is interesting to note that, although we have had the automobile for considerably less than half of those 200 years, more Americans have died in automobile accidents than in all the wars our nation has fought. *Driver* magazine is an effort of the military services to help their people use and enjoy cars, motorcycles and recreational vehicles in a safe manner. It is a tangible sign of the value our country places on the well-being of all Americans, and I hope that its readers will continue to enjoy this magazine and learn from it for many years to come.

General David C. Jones
Chief of Staff, USAF



The Bicentennial Issue

DRIVER

THE TRAFFIC SAFETY MAGAZINE FOR THE MILITARY DRIVER

VOLUME 10 NUMBER 2

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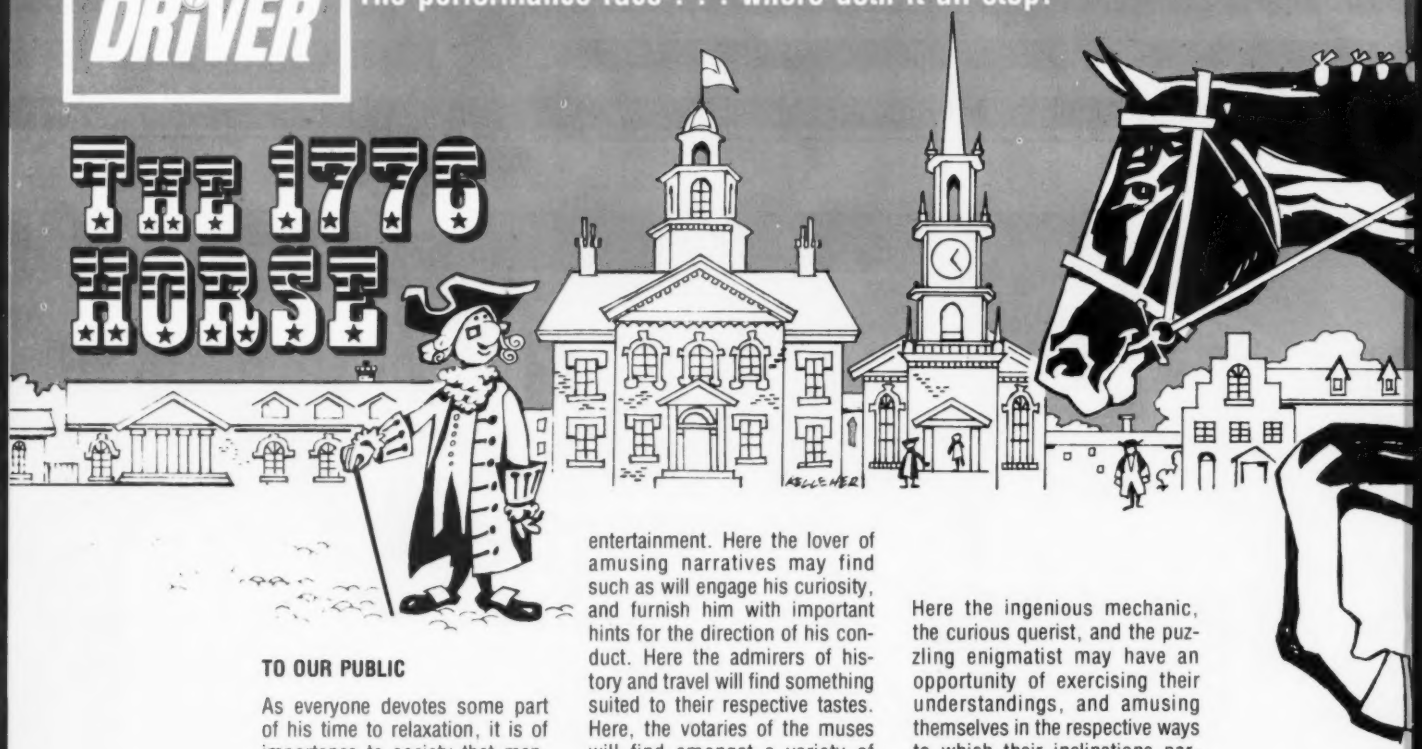
DRIVER
The performance race . . . where doth it all stop?

THE 1776 HORSE



TO OUR PUBLIC

As everyone devotes some part of his time to relaxation, it is of importance to society that mankind be furnished with proper amusements, in which to employ their vacant hours. Upon this platform was this work founded. A work in which readers of the most different tastes may find entertainment. Here the lover of amusing narratives may find such as will engage his curiosity, and furnish him with important hints for the direction of his conduct. Here the admirers of history and travel will find something suited to their respective tastes. Here, the votaries of the muses will find amongst a variety of pieces, some, at least, which will merit their applause. Here, the lover of wit and humour may be furnished with matter for innocent mirth, in laughable stories and humorous anecdotes. Here the ingenious mechanic, the curious querist, and the puzzling enigmatist may have an opportunity of exercising their understandings, and amusing themselves in the respective ways to which their inclinations particularly lead them . . . We shall only add, that it shall be our constant endeavour to merit the approbation of the public, by careful selection of the most useful and entertaining pieces.

When, in the course of human events . . . wait, that doth not be the course of our text in this month's issue . . . we must have been thinking of some other document.

We must needs decry the continuous increase in the size of our steeds. It seems to us, your hmbl editors, that this undue stress on high performance can but lead this young and vigorous country down the garden path in the direction of strikes, riots, and unsettled citizenry. For, as B. Franklin says, "Waste not, want not." The increasing consumption of hay is not to be brooked by the majority of us who maintain our equinal conveyances in a manner becoming the virtues of thrift and honesty.

But, we digress. The purpose of this test is to apprise you of the performance of the latest offering from Richmond, Va, the transportation capitol of these United States.

TEST SUBJECT

In agriculture, one of the most simple and necessary employments, no man turns up the ground without an expectation of harvest; that harvest, which inundations may sweep away, or which death or sore calamities of many kinds may hinder him from reaping.

Forsooth, nay, verily, it is the horse which man must have to complete his labors.

With this need in mind, the esteemed Editors of DRIVER proceeded to the farm of one Geo. Washington, gentleman of some standing and General in the Army. (Himself being a horse breeder of no small repute.) Whereupon the honorable gentleman provided us with the subject of this rode test, a brown stallion of some 18 hands in height.

Upon saddling, we smote him with cane in a most unmerciful manner until the honorable Washington informed us that to continue to do so would result in grievous harm to our assembled personages. We forsook further excursions with whip or cane.

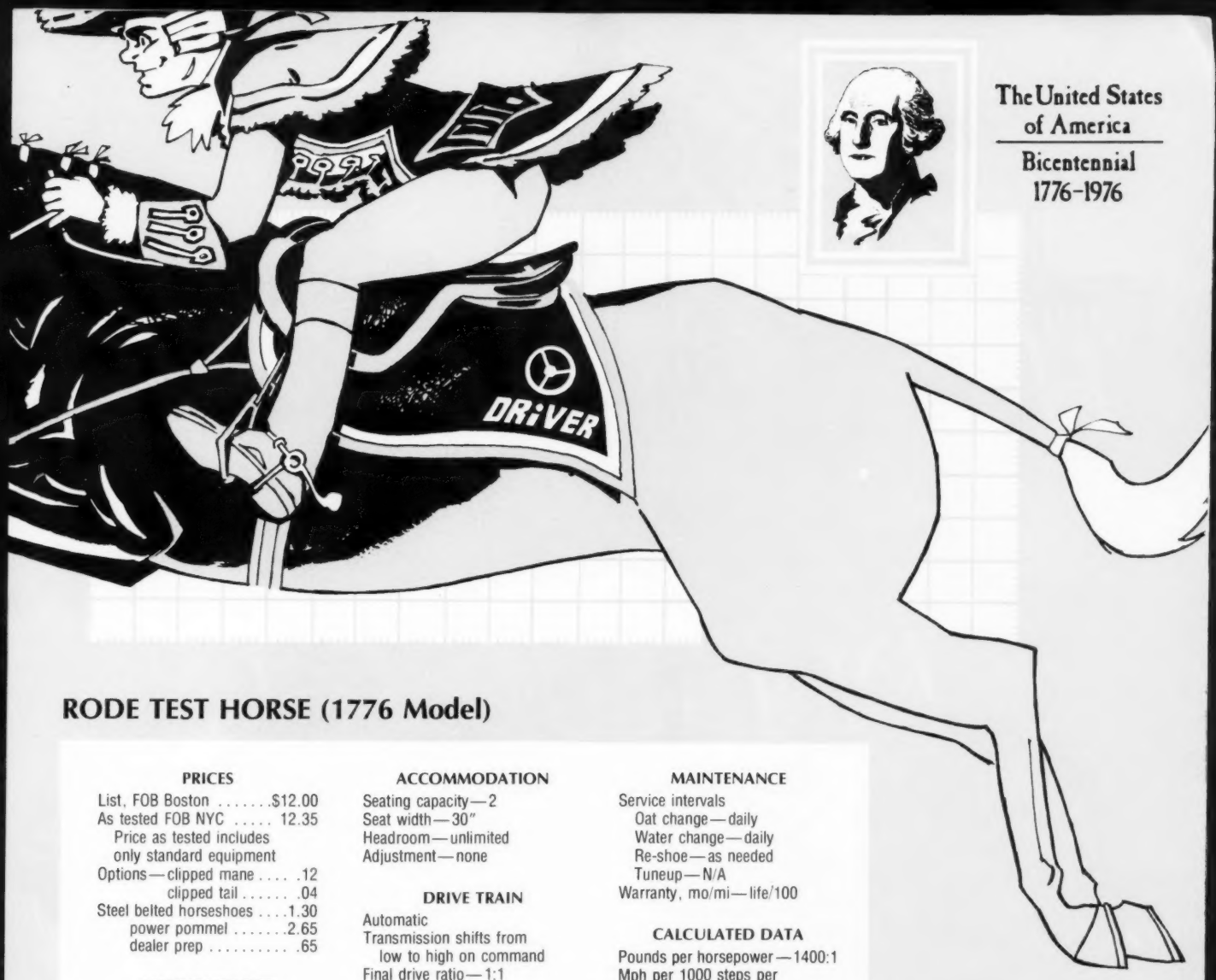
Having been set upon a humane course of treatment (unusual in this day and age), we endeavored to ascertain certain performance parameters of said horse.

The test area was the Old Boston Post Road, with highway conditions ranging from suitable hardpack to impassable quagmire (Gen Washington's legions having used the road but a fortnite ago).

In the accompanying chart, the discerning reader will note the reference to steel-belted radial horseshoes. These be a relatively new development in the field of high-performance horses, and were capably designed by the rt. hon. Felix Firerichgood of the Akron, Ohio territory.

We also feel compelled to note that, during his travels, our roving correspondent noticed certain horse-drawn conveyances of great grandeur and superior engineering being produced by a native Indian named Pontiac at the site of the small settlement of Detroit. Mayhap we should make our readers aware of the marvelous gains in transportation being made there, and advise them to keep a weather eye out for further developments from that quarter.

Of course, the Editors of DRIVER realize that nothing will ever replace the horse, but, at this time, who can say what changes may occur over the next two hundred years?



The United States of America

Bicentennial 1776-1976

RODE TEST HORSE (1776 Model)

PRICES

List, FOB Boston $12.00
As tested FOB NYC 12.35
Price as tested includes only standard equipment
Options—clipped mane .... .12
clipped tail ..... .04
Steel belted horseshoes 1.30
power pommel 2.65
dealer prep ..... .65

MANUFACTURER

Cornworthy's Bruce out of McCall

TEST DATA

Weight—1400
Test weight—1407
Weight distribution front/rear—50/50
Hoofbase—48 inches
Track—13
Length—7.5'
Width—38
Height—18 hands
Ground clearance—36 in.
Overhang front/rear—0/0
Useable carrying capacity—300 lbs (max gross)
Fuel capacity—¼ barrel oats

ACCOMMODATION

Seating capacity—2
Seat width—30"
Headroom—unlimited
Adjustment—none

DRIVE TRAIN

Automatic
Transmission shifts from low to high on command
Final drive ratio—1:1

LAYOUT

Front engine/rear drive
Body—unitized
Brake system—mechanical w/steel shoes
Steering—leather, manual
Front suspension—2 pneudraulic
Rear suspension—2 pneudraulic

INSTRUMENTATION (Optional)

0 to gallop speedometer
Oat consumption gauge
No directionals, high beam, or exhaust
Gas recirculation (EGR) available

MAINTENANCE

Service intervals
Oat change—daily
Water change—daily
Re-shoe—as needed
Tuneup—N/A
Warranty, mo/mi—life/100

CALCULATED DATA

Pounds per horsepower—1400:1
Mph per 1000 steps per minute—30
Steering index—1.42
Brake swept area—varies with brand of horseshoe

RODE TEST RESULTS

ACCELERATION

Time to distance, sec:
0-100 ft 3
0-500 ft 6
0-1320 ft (¼ mi) 25
Speed at end of quarter ..... 40 mph

SPEED IN GEARS

Walk 3
Giddyap 7
Trot 10
Gallop 30

FUEL ECONOMY

Normal driving—28 miles/bucket oats
Cruising range, 1 pt oats reserve—35

HANDLING

Speed on 100 ft radius 22
Lateral acceleration ..... .02

BRAKES

(Optional steel belted radial horseshoes)
From 30 mph—12 ft
From 20 mph— 6 ft
Control in panic stop—excellent
Effort—(N/A, depends on type of bit)
Fade—minimal
Parking—hold on 30% grade

EXTERIOR NOISE

Normal ..... 0 dBA
Whinny ..... 32 dBA

America's Birthday and the DELMARVA* TRAFFIC

by
SSGT ROBERT C. MARSHALL
1361st Photo Sqdn AAVS
Arlington, Virginia

Have you noticed that all the painting up and fixing up for this summer's big birthday celebration is about finished? That everything from the flowers in front of the headquarters building to your new bowling ball has come up red, white, and blue?

Yes, it's July 1976 and every highway and byway leading to Washington, D.C., is filling up with Americans out to visit the nation's capitol. Crowds of people will be jamming the roads all summer long, and in every mind one thought will be uppermost: "Let's see everything we can, go every place we can, as fast as we can, before we run out of time and money!"

So here are some hints to make your driving around the D.C. area more pleasant, as well as accident-free.

First of all, some of the road construction which was planned for completion before this summer is not yet finished. Route 495 in Virginia (part of the Beltway) still has a lot of construction sites, hazardous barriers and poor lane markings. And a regular maze of subway construction adds plenty of confusion to the traffic scene in Washington, D.C. and Arlington, Va.

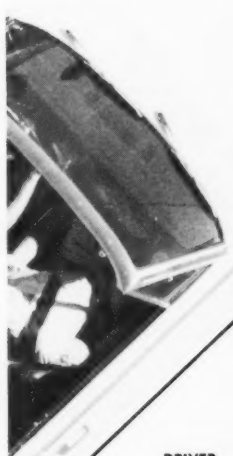
Since the tourist has no good source of information about exactly where he will run into traffic problems caused by such construction activity, the best thing to do is to take it calmly in stride when you do. Sure, it's going to slow you down, but it doesn't have to make you an angry, aggressive driver unless you let it. By all means, allow yourself plenty of time and don't try to stick to a minute-by-minute schedule.

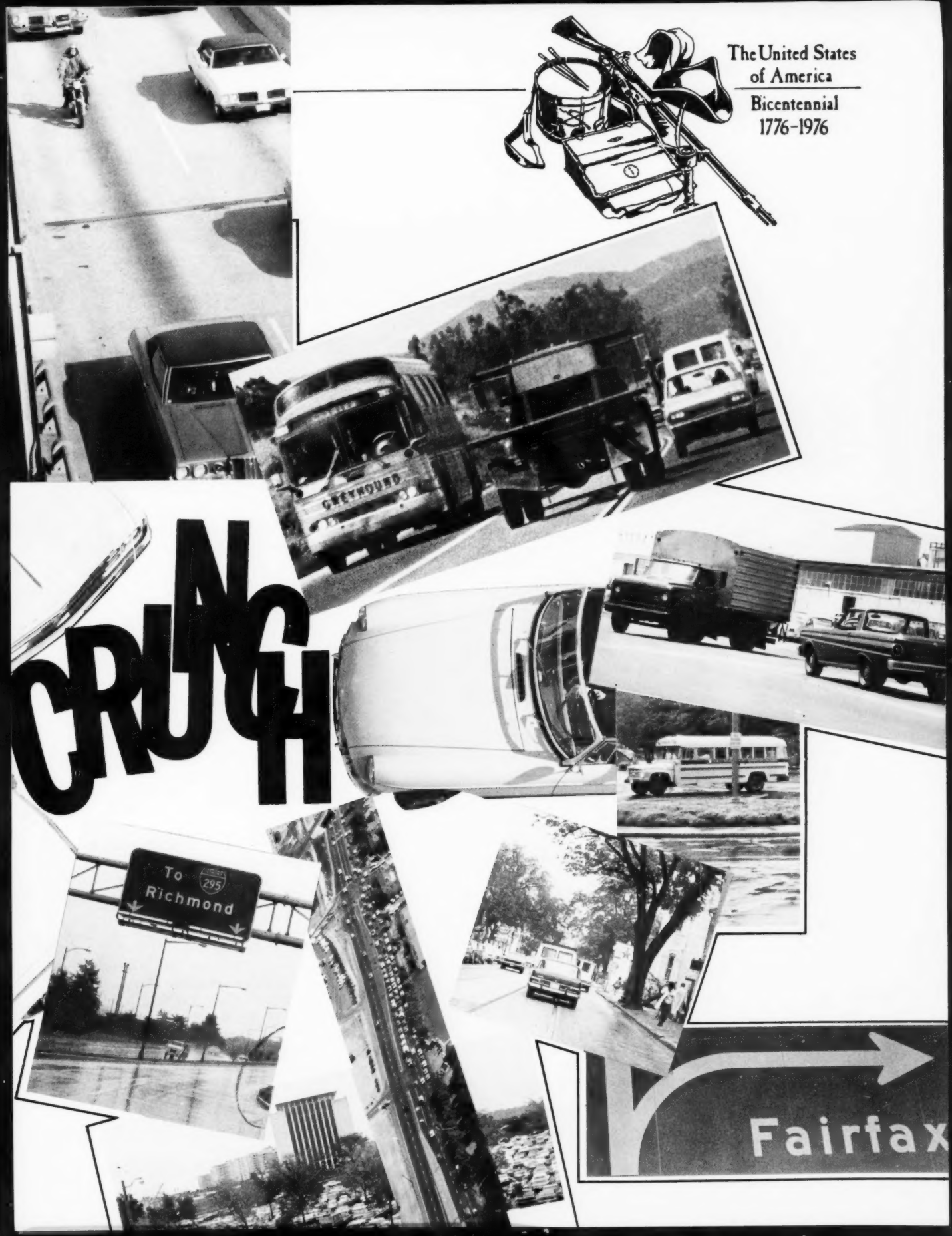
If you're a stranger to East Coast driving habits, here are some suggestions about when NOT to drive:

- Mornings between 7:00 and 9:00.
- Evenings between 4:00 and 7:00.
- Anytime in a metropolitan area if you can't find your way around by using a street map (and don't feel foolish if you can't – a lot of people have that problem).
- When you know there are a lot of static displays, parades, or amusement parks in the area.
- Near stadiums and arenas.

continued

*Delaware-Maryland-Virginia




The United States
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Bicentennial
1776-1976
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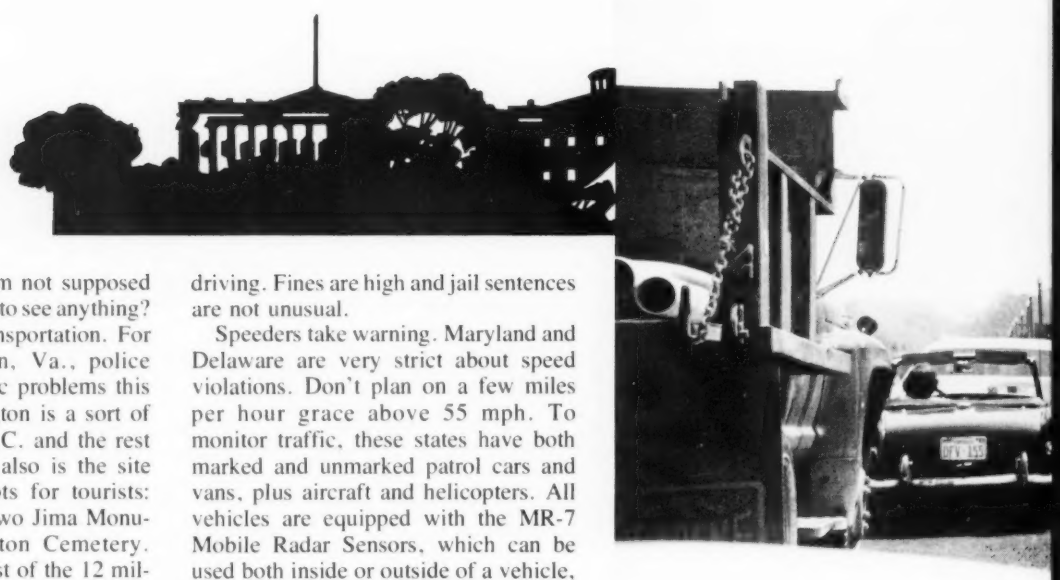

Watch out for bike riders weaving in and out of traffic lanes in downtown areas.

SHUTTLE BUS

Okay, you say, if I'm not supposed to drive, how am I going to see anything? The answer is local transportation. For instance, the Arlington, Va., police are worried about traffic problems this summer because Arlington is a sort of buffer zone between D.C. and the rest of Virginia. Arlington also is the site of three important spots for tourists: the Lee Mansion, the Iwo Jima Monument, and the Arlington Cemetery. "It's a safe bet that most of the 12 million tourists expected in the area during the next few weeks will be visiting all three," says Lt J. W. Rouse, Arlington motorcycle patrolman.

The Metro Bus Lines have set up a "Fringe Parking" program that should make you one happy sightseer. This shuttle bus service has three main terminals: Fort Myer's South Post area in Arlington, the Pentagon's North Parking Lot, and R. F. Kennedy Stadium's parking lot. Just park your car in one of these places, go to the shuttle bus station, pay $1.50, and ride around town and the D.C. area all day if you like.

When you're through, find the shuttle route back to your parking area and away you go. What more relaxing way to see the sights? As this is being written, the system has been operating about 10 days and appears to be the best thing yet for covering the area.

TRAFFIC LAWS

Drivers in the D.C. area are faced with a somewhat novel situation. They must be familiar with the traffic laws of the District, Virginia, and Maryland. Bicentennial tourists will probably add Delaware. All these states are known for strict enforcement of their laws, and they are especially tough on drunk driving. Fines are high and jail sentences are not unusual.

Speeders take warning. Maryland and Delaware are very strict about speed violations. Don't plan on a few miles per hour grace above 55 mph. To monitor traffic, these states have both marked and unmarked patrol cars and vans, plus aircraft and helicopters. All vehicles are equipped with the MR-7 Mobile Radar Sensors, which can be used both inside or outside of a vehicle, either stationary or moving.

Delaware State Police have initiated a group called Tactical Accident Control, which has new, highly visible vehicles painted red, white, and blue. They, too, are equipped with the radar units. Tom Prichett of the Delaware Highway Safety Department told us, "The primary objective of the T.A.C groups is to apprehend speeders and drunk drivers. Because of their color schemes, the vehicles can be seen for miles and we think their mere presence on the road will provide a substantial deterrent to violations."

Delaware residents with CBs cooperate with the police by using channel "9" to report drunk drivers, reckless drivers, and hazardous road conditions. The state police monitor the CB channels and promptly take action to eliminate hazards. Channel "9" is also used to request emergency assistance from the police.

ACCOMMODATIONS

One of the big questions around the D.C. area the last few months has been "How are we going to accommodate all those tourists this summer?" The District is always a big tourist attraction and many accommodations exist, but it would be foolish indeed to arrive during July or August 1976 without confirmed reservations.

Some of you readers are probably figuring on hooking up the camper and RVing it. This may not be the best idea you've ever had. Trailer parks and well-developed campgrounds are scarce to nonexistent. Traffic officials in Virginia told us the closest camping sites are 25 miles away from the District in any direction.

WASHINGTON, D.C.

The traffic pattern for Washington, District of Columbia, was established in the early 1790s by a French engineer and architect, Major Pierre Charles L'Enfant. He envisioned parks, broad streets, radiating avenues, and beautiful vistas. It is remarkable that his basic street plan handled the traffic quite well for 150 years. In the late 1940s traffic

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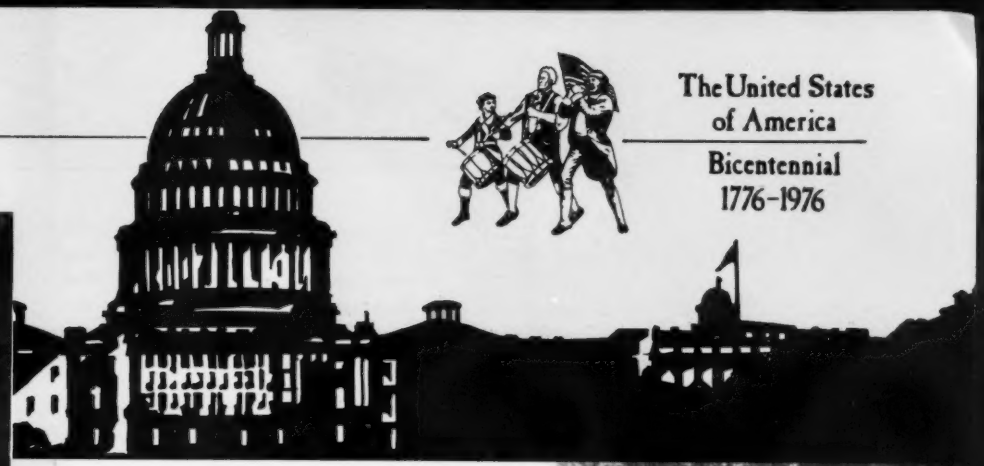


Beware of the Virginia half of Route 495 . . . its whole length is a mass of construction sites, hazardous barriers, and ill-marked or nonexistent lane markings.

The Washington, D.C. and Arlington, Va. areas are a maze of subway construction sites, which add to the confusion of the rush-hour madness.

began to clog and changes were undertaken.

The first thing you must know about Washington is that the city is divided into four sections (quadrants) by imaginary lines which extend from the Capitol. The "lines" (North, East, and South Capitol Streets, and the Mall to the west) mark off the following sections: Northeast (N.E.), Southeast (S.E.), Southwest (S.W.), and Northwest (N.W.).

Traffic jams are a common occurrence . . . at any time of the day. Especially if caused by slow-driving tourists who don't know their way around town.

Always heed the flagman's signals around subway construction sites. They are there to help, not hinder your progress, and prevent accidents.

Beginning with the section lines, the streets running north and south are numbered; those running east and west are designated first by letters of the alphabet, then alphabetically by name in the northern part of the city. Criss-crossing the streets are diagonal avenues, many of which are named after states. (These avenues and their by-product, traffic circles, are what literally *drive* the visitor into mad confusion.)

If you remember nothing else about this setup, bear in mind that the quadrant initials (N.W., etc.) are an essential part of any Washington, D.C., address, for they indicate in which of the four areas a given address is located. You're not going to find that great seafood restaurant or your mother's cousin's house without a full address.

The Capitol Beltway, a 66-mile circular highway around the city, was completed 12 years ago and for the most part fulfilled its promise of expediting travel to various parts of the metropolitan area. However, during rush hours, cars stack up at those exits which feed into congested two-lane roads. And frequently motorists find themselves in exit lanes by mistake and make sudden moves to escape. Moreover, in some places lanes will disappear, causing traffic to merge into adjoining lanes. Correction of some of these problems is what leads to the construction hazards on 495 in Virginia that we warned you of earlier.

CRIME

It is too bad that an article about our nation's birthday celebration must include a warning about protecting your property and your person, but Washington, D.C. is a high crime area. Keep your valuables in your car trunk. Lock your car. Don't carry large amounts of cash. Think about how you are carrying your wallet or handbag in a crowd. On the other hand, we don't suggest you treat all your fellow tourists as though you suspected they were pickpockets! Simple courtesy and human decency enable large crowds of strangers to mingle together in harmony. And that's what America's birthday is probably all about.

The United States of America

Bicentennial 1776-1976

BOATING FOR BEGINNERS

All you seasoned skippers, please note: This article isn't for you, so you might as well turn back and read the Backyard Mechanic. This one is for the brand new boat owner and even more for you who plan to borrow a boat for a fishing trip, or maybe rent one for a weekend cruise on the river.

The water is a very different environment, and highly unforgiving of ignorance and carelessness. There are a handful of facts the amateur *must* know if boating is to be a pleasure and not a frantic frenzy of jangled nerves and near emergencies.

Many of the things the boat operator does and the amount of equipment he carries are governed by one simple factor – the *class* of boat. The class is determined by the overall boat length.

continued

Don't ignore a small craft warning. A fool and his boat are soon parted, they say. Remember you can get into very bad weather even with a fair forecast. Line squalls, thunderstorms and the like are very unpredictable. Keep an eye on the weather.

STORM SIGNALS

Fig. 1 The table summarizes the storm signal system.

FLOAT PLAN

of _____ _____
Name and address of boat operator — Phone number

Search for an overdue boat has a much greater chance of being successful if the Coast Guard or other rescue agencies have certain facts. For your own safety and before leaving on a cruise, complete this form and leave it with a reliable person who will notify authorities if necessary.

IF OVERDUE, CONTACT _____
Name and phone number of rescue agency near point of departure.

VESSEL Name_____ CF_____ Length_____ Type/Style_____

Power_____ Rig_____ Hull Color_____ Range_____ Speed_____
Inboard — Outboard (If sail)

PERSONS _____ **RADIO** _____
Number aboard Frequencies

DEPARTURE FROM_____ Date/Time Depart_____

DESTINATION_____ Stops Enroute_____ Date/Time Return_____

IMPORTANT: DON'T FORGET TO CANCEL FLOAT PLAN WHEN YOU RETURN

State of California, the Resources Agency
DEPARTMENT OF NAVIGATION AND OCEAN DEVELOPMENT, Sacramento, California 95814

One of the most important safety devices is one you leave behind on land. If you fill out a Float Plan, the Coast Guard will know where to look for you when alerted that you are overdue.

continued

BOATING FOR BEGINNERS

Class A: less than 16 feet
Class 1: 16 feet but less than 26 feet
Class 2: between 26 and 40 feet
Class 3: between 40 and 65 feet

Measurements are taken from the tip of the bow in a straight line to the stern (back). Outboard motors are not included in the measurement. On auxiliary sailboats, the bowsprit (short pieces of spar attached to the bow) and boomkin (on the stern) are not included.

You can obtain a list of the federal rules for each class of boat by stopping by or writing your nearest Coast Guard station and asking for CG Form No. 290, "Pleasure Craft – Federal Requirements for Boats." There are also state requirements and these vary from state to state so check them out. But there's one important truth to boating that most experienced skippers preach: Carrying more than the minimum of legally required safety equipment on board brings greater boating enjoyment and helps assure less troublesome cruises.

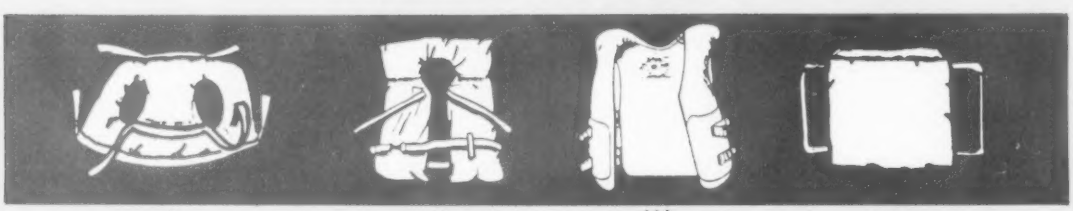
FLOAT PLANS

There are two things to do before going out to the boat. Check the weather reports (see Fig. 1 for storm signals) and file a float plan. Filing a float plan sounds like an official kind of act, but it isn't. It simply means telling a *reliable* person *where* you're going, *who* you will have with you and *when* you're coming back. Stick to your plan once you're out on the water. If you should go to another area, then your float plan is no good.

The point of the float plan is simple. Should you fail to return, your reliable friend calls the Coast Guard and rescue efforts are set in motion. Don't try to file your float plan with the Coast Guard. They need to know about you only if something goes wrong.

Fig. 2

PERSONAL FLOTATION DEVICES



I II III IV

Type I—A life preserver with more than 20 pounds of buoyancy, designed to turn an unconscious person face up.

Type II—A buoyant vest with at least 15.5 pounds of buoyancy, designed to turn an unconscious person from a face-down to a face-up floating position.

Type III—A buoyant vest or jacket with at least 15.5 pounds of buoyancy, *not* designed to turn an unconscious person face up.

Type IV—A throwable device such as a ring buoy or the familiar buoyant cushion.

Type IV is acceptable as primary life saving equipment on recreational boats less than 16 feet in length (Class A). Boats 16 feet or longer are required to carry a Type I, II, or III for each person on board, plus at least one Type IV PFD.

The United States of America
Bicentennial
1776-1976

The Coast Guard Boating Safety Detachment (BOSDET) cruises recreational waters. They give verbal warnings and tickets just like highway patrolmen. Boating accidents are increasing at a fantastic rate. Coast Guard blames carelessness.

LOADING THE BOAT

Overloading is the basic cause of many, many serious boating accidents. How do you know what's a safe load? Well, many boats have a capacity plate which tells you exactly. The manufacturer normally mounts this plate near the operator's position.

If your boat doesn't have one, a little simple arithmetic is in order.

First, some assumptions: the engine you have is of a size proper for the boat's hull. There is a normal amount of fuel, equipment and supplies aboard. The wind, water, and weather are near perfect. The average weight of the people in the boat is 150 pounds.

First, multiple the overall length of the boat (say that's 18 feet) by the width at the widest part (say that's 5½ feet). 18 multiplied by 5.5 equals 99. Now divide 99 by 15 (15 is a constant and comes from the assumption that the average weight of the people is 150 pounds). Your answer is 6.6, which means you round off *downward* and know you can safely carry 6 people. Distribute the load evenly and keep it low in the boat.

PFDs

No matter what type of craft you operate, mechanically propelled or not, you'll need one approved Personal Flotation Device (life vest, cushion, etc.) for each person aboard, including any water skiers, even though they might be under tow. There's nothing against taking along extras. They may come in handy. (See Fig. 2 for types and minimum requirements.)

Coast Guard approved PFDs are orange and carry the words "USCG approved." (There are many on the market and in use which are *not* approved.) As soon as you go aboard, have all hands pick out a PFD for their personal use, put it on and adjust the straps and fasteners for individual fit. Leave them adjusted and keep them handy while they're not being worn. Hundreds of boaters drown every year in accidents where a PFD was available but was not used. If you are ever boarded by a Boating Safety Officer for examination and he finds your PFDs aren't quickly accessible, you may receive a citation (ticket, just like on the highway).

The skipper must determine who is to wear PFDs while underway. Certainly, young children and nonswimmers should wear them, as well as passengers who have physical handicaps. If the weather is anything but clear and calm, or if there's heavy traffic or choppy water, such as the mouth

continued

(right)
Personal Flotation Devices should be adjusted for individual fit before setting out and young children like this one should wear their PFDs at all times when underway.

The Coast Guard to the rescue . . . welcome sight to the pleasure boater in trouble and proof of the value of filing a float plan.

continued

BOATING FOR BEGINNERS

of a river or a tide-water inlet, then everybody should get on their PFDs.

If a PFD is ripped or badly mildewed, it won't perform when needed. A simple check for mildew is to press your thumb firmly on the cloth surface and twist. If the material parts, the PFD should be replaced.

OTHER ITEMS

Although usually not a legal requirement, an anchor is just about a must. It isn't the anchor's sheer weight which keeps the craft in place but rather the holding ability on a bottom surface. If you have an anchor, don't forget the line. There should be enough line to equal five times the depth of water where you intend to anchor. The line will also come in handy for towing or rafting (one or several boats tied to a single anchored craft).

Other items to have aboard are a tool kit, containing spare spark plugs and wrench, pliers, screwdrivers, electrician's tape, cotter and drive pins, and a spare prop.

Don't forget a flashlight and a well-stocked first aid kit. A bilge pumper isn't a bad idea. And try to take along spare gas, a boat hook to fend off from pierside or untangle mooring lines, and one other piece of insurance – a paddle.

A boarding ladder can be a great addition to an outboard boat, especially at anchor when everyone wants to take a swim, but don't leave the ladder attached to the side when underway. That's a good way to lose it overboard or, worse, have it freed to go flying into some unsuspecting victim.

FIRE EXTINGUISHERS

Outboard motorboats, unless they're 26 feet in length or over and have enclosed fuel compartments, are usually not required to carry fire extinguishers. Common sense tells us, however, that an extinguisher is always a valuable piece of emergency equipment to have on board.

Approved fire extinguishers are identified by letter and Roman numeral according to the type of fire they are designed to put out and their size.

Extinguishing agents that are approved by the Coast Guard are listed in Fig. 3. This table also points out the relationship of the Roman numerals to the amount of extinguishing agent, and shows the legal requirements for various size boats. Toxic vaporizing – liquid-type extinguishers, such as those containing carbon tetrachloride or chlorobromomethane, are not approved and are not accepted as required fire extinguishers because their vapors are harmful when inhaled.

How can you be sure an extinguisher meets Coast Guard approval? Just look at the label. For example: "Marine-Type USCG-Type B Size I Approval No. 162-028/EX. . ."

It's important where the extinguisher is stored. Suppose yours is in the bow storage compartment. Since you're naturally a very agile person you could probably retrieve it in two or three minutes. By that time, the boat could be lost and you with it. Keep the extinguisher where it's easy to grab.

Check the condition of the extinguisher before you leave shore. Extinguishers with pressure gauges should show pressures within the designated limits. Locking pins and sealing wires should be checked to make sure the extinguisher has not been used since last recharged. Extinguishers should never be tried just to see if they're in

Fig. 3

FIRE EXTINGUISHERS

Class (type-size)	FOAM (Min Gals)	CARBON DIOXIDE (Min Pounds)	DRY CHEMICAL (Min Pounds)	FREON (Min Pounds)
B-I	1¼	4	2	2½
B-II	2½	15	10	—

Minimum Number of Hand-Portable Fire Extinguishers

Class of Boat	When no fixed fire extinguishing system in engine space	When a fixed fire extinguishing system is installed in engine space
A	One B-I	None
1	One B-I	None
2	Two B-1 or one B-II	One B-I
3	Three B-I or one B-I and one B-II	Two B-I or one B-II

operating condition. The valve might not reseal and so result in a slow leak.

FUELING

The greatest cause of fire and explosion aboard recreational boats is gasoline fumes (vapor) collecting in the low parts of the boat (bilges). Gasoline vapor is heavier than air and sinks to the lower compartments. If a flow of clean air isn't present to blow gas vapor out of the boat, then it sits there waiting for the first spark – from a cigarette, an electric switch . . .

One cup of gasoline allowed to vaporize has the same explosive power as 15 sticks of dynamite. It doesn't take a lot of imagination to picture what effect that power would have exploding in the bilges of a 25-foot cabin cruiser.

The law requires some form of adequate ventilation on every pleasure boat. But fueling must be done very carefully. This is such an important operation that most skippers insist on doing it themselves. There are five common sense rules that must be learned and obeyed:

1. Always fuel the boat in good light.
2. When the boat is tied up at a fueling dock:

- don't smoke, light matches or lighters, or operate electric switches.
- stop engines, motors, fans – anything that might cause a spark.
- secure all fires, galley stoves (don't forget the pilot light on gas stoves and refrigerators).

3. Before you start to fuel:

- check the mooring of your boat and get everybody out of the boat.
- close ports, windows, doors and hatches (keep the fumes and vapor out of the boat).
- check your tanks, filler pipes, tank vents, flame screens.
- check to see how much fuel the tank will take.

4. During fueling:

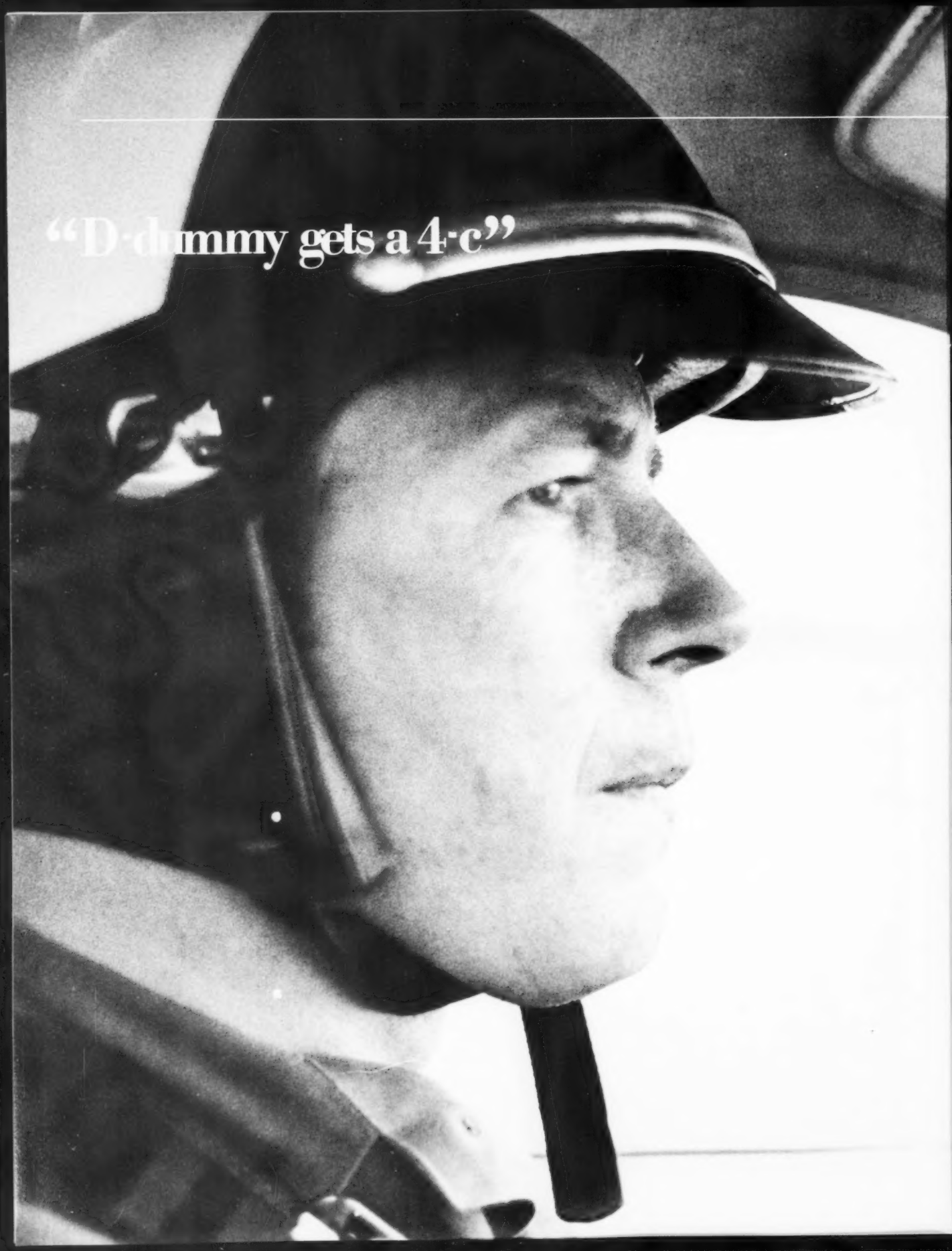
- Keep the nozzle of the hose in contact with opening to prevent static sparks.
- Guard against spillage – if fuel spills, wipe it up immediately; don't let any vapors get below.

5. After fueling:

- replace caps (covers) of fill openings.
- open up the boat completely and ventilate.

continued on page 30

A boat in water any length of time accumulates a large amount of marine growth on its underside. This natural fouling of a hull's surface can have tremendous effect on the boat's performance and maneuverability. Marine growth should be kept at a minimum by scrubbing the hull at intervals or, better yet, giving the boat a good wash-down after each use.


"D-dummy gets a 4-c"

CHP ACADEMY ...can YOU hack it?

TSgt Don Dawson was trying to herd the black-and-white Dodge Monaco through a maze of orange plastic cones when the cars' radio crackled, "Ataway, D-dummy, you just killed two small dogs and an 87-year-old woman. D-dummy gets a 2-b."

Don shook his head in disbelief. "I've been driving for 15 years and I've never hit anything . . . how come I get out here and knock down everything in sight?"

Don wasn't alone in his disbelief. Eleven other members of the 2582d Security Police Squadron were having the same reactions and feelings of dismay.

If you're trying to figure out what a black-and-white car, a D-dummy, and a 2-b have in common, follow along with us and we'll set the scene.

CHP ACADEMY

The place is the California Highway Patrol Academy in Sacramento, California, and one reason the McClellan AFB Security Police are here is to learn how to drive again. Black-and-white Monacos are the cars used at the Academy, D-dummy is the call sign of one of the cars, and 2-b means the driver has lost five points for hitting traffic cones.

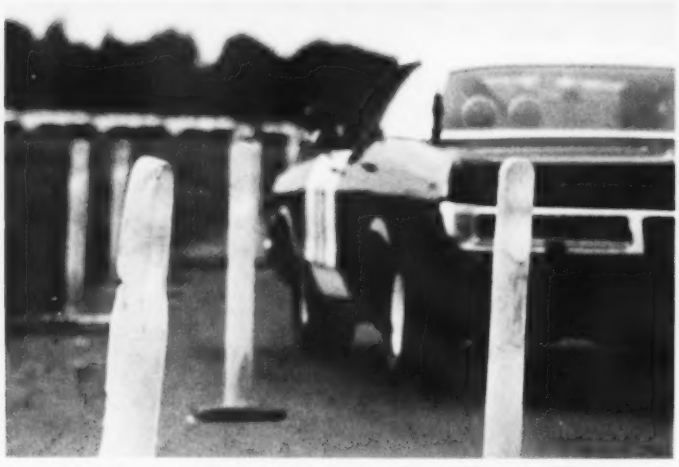
continued

After demonstrating how locked wheels contribute to skids, the instructors showed how a vehicle stops with one bald front tire . . .

or almost stops, anyway. Car has just completed the third 360 and is headed off into the sunset. A pretty eye-opening demonstration for most of us. Note pylon laying on its side . . . under normal street conditions, it could have been a child.

(left)
TSgt Don Dawson readies himself for a high-speed chase. Object was to catch a CHP officer in a high-powered car while avoiding hazards thrown into the path by other officers. Nobody caught the "rabbit" but everyone learned to be more aware of other traffic!

(right)
Take one baseball-park size asphalt area, add water, oil, and cars with bald tires, and you have a skid pan. Exercise was one of the more popular areas until students were told to stay on it for two hours at a time! Many students felt they learned more here than anywhere else.



". . . **and keep your left fender** lined up with the left pylons." Students had only a little trouble avoiding cones while moving forward. However, it took just a *little* practice to do it in reverse!

Why would Security Police personnel have to learn to drive again? Don't they drive enough to keep in practice? If they really don't know how to drive, why is the CHP teaching them and not a regular driving school? DRIVER went to Lt Col Lyle Ahner, Commander of the 2852d SPS to find out.

After it got boring just going around and around the skid pan, the instructors threw the students a curve by chasing them in a mufflerless old Chevy. Students felt they were doing pretty well until the Chevy began passing them on the inside!

Amn Terina Roux during the backing exercise. Gals had little trouble with the course but wished the huge Dodges had taller seats. A good tip to remember when shopping for a new car is that all people aren't six feet tall, and shorter people may have difficulty seeing out. The bigger the car, the bigger the problem.

WHY THE CHP ACADEMY?

"In one six-week period in 1973," said Colonel Ahner, "we had six reportable accidents. That's unacceptable in anybody's book, but we as Security Police can't accept anything less than perfect. I know that's a tall order, but I felt that because my people are the best, their training has to be the best. Since the Security Police and the CHP have a close working relationship, I decided to see if perhaps the CHP Academy driving course couldn't provide the special type of training we needed.

"I made arrangements to attend the CHP Emergency Vehicle Operator's Course (EVOC), and I came away with a new appreciation for the skills needed to become a really good emergency vehicle operator. I'd been driving for almost 40 years and thought I was pretty good. When I got out of the course, I knew 100% more about performance driving than when I started, and my personal driving habits changed for the better. Even my wife remarked that while I'd been a good driver, now I was a better driver."

EVOC

The California Highway Patrol Academy conducts EVOC at its facility in Sacramento. The course, as Security Police receive it, takes two full days and consists of classroom training on vehicle operation theory, and *lots* of driving practice.

DRIVER has attended most EVOC courses at one time or another and we were struck by the difference between those other courses and the CHP's course. At the CHP course, you not only learn *how* a car behaves, but *why* it behaves the way it does.

Officer Bill Starnes and Officer Jim Metcalf explain about the traits of understeer and oversteer, skidding and skid recovery techniques, pursuit procedures, and accident avoidance techniques. They show how weight transfer affects handling and stopping, and how the "G" forces generated in a high-speed curve can be overcome by correct steering inputs.

After three hours in the classroom, it's off to the asphalt. For the next day and a half, students will be kept behind the wheel with only short breaks for technique training and individual evaluation.

D-DUMMY

As the Security Police arrive at the road training area, they are assigned a car and a call sign. The call signs are letters followed by alpha designations (like C-Charlie) and frankly, we've cleaned up the alpha designations for publication. We asked why the sometimes risque call signs were used. Officer Wes Anderson explained that as the course progressed, it became very trying to get the attention of a driver who was attempting to concentrate on missing pylons, so they used the more objectionable names to insure that the students would listen up.

DRIVER noticed that the students' reactions to being called insulting names most often resulted in the attitude "that instructor called me a dummy. Well, I'll show him I'm no dummy." And they immediately began to try just a little bit harder. The harder they tried, the better they got, which was the result the CHP was trying to achieve.

There were two female Security Police attending the course, Amn Annette Haws and Amn Terina Roux, and we asked them how they felt about the call signs. They both agreed that at first they were a little uncomfortable with the names, but as they realized the purpose for the call signs, they became accustomed to them and weren't bothered by them for the duration of the course.

WHAT NEXT?

That was the question on the lips of all the Security Police. "It seems like when we've got one thing down pat, they move us on to something even more difficult."

"Well," said Officer Dick Godon, "that's exactly what happens. We continually try to challenge our students into harder and harder things. The thought is that when they've mas-

continued

tered a difficult maneuver, they get the self-confidence that enables them to tackle the next exercise."

Colonel Ahner gave DRIVER a brief outline of the course and its goals:

■ Braking and siren demonstration . . . acquaint students with limitations of siren effectiveness, demonstrates necessity of maintaining rolling friction to insure fast, safe stops.

■ Vehicle placement . . . allows student to develop proficiency in backing, parking, close quarter maneuvering, and rapid collision avoidance tactics.

■ Skid control . . . develops skills of skid control and avoidance. Students learn to get a "feel" of impending skids.

■ Commentary defensive driving . . . students take patrol cars into community to develop consciousness of traffic hazards and potential accident locations. Students narrate as they drive, and student's observations are critiqued by fellow students and instructors.

■ Defensive driving practice . . . students operate patrol cars (or ambulances, or fire trucks) over different and difficult routes. Obstacles are continually

Results of the ol' "lane change at 50 mph" trick. Just when you think you've got the procedure down pat, they throw in a monkey wrench. Imagine the results if you tried this trick in traffic.

(right)
The instructions are simple . . . merely drive toward the pylons and then change lanes to match the green light. Nothin' to it! Unless, of course, you happen to be traveling at 30 mph, then it gets tricky.

put in front of drivers to sharpen reactions and polish accident avoidance techniques.

BACK TO D-DUMMY

Let's get back to TSgt Don Dawson for a moment and try to answer his question about why he can't seem to get the hang of avoiding pylons. According to Sgt Don Watkins of the CHP, the prime reason people have difficulty with the course is that few, if any, of the students have ever encountered conditions like this. They may have seen *similar* situations in traffic, but never were the situations so intense or complicated. The course is set up to strain each drivers' ability to the utmost to prepare him for any eventuality. If a student can learn to cope with the situations forced upon him at the CHP Academy, he'll be ready for almost *any* problem he could encounter in real life.

This preparedness is why each person taking the course improves his personal driving. The EVOC stresses what *could* happen in a given situation, and responses for each situation are opened to the student who becomes aware that he now possesses the knowledge to avoid situations instead of becoming embroiled.

In all fairness to TSgt Dawson and the other Security Police who attended the course, it should be pointed out that by the *end* of the two days, each driver was progressing through the rows of cones at a rate much greater than they were able to achieve earlier. Let it also be noted that on the final high-speed pursuit run, not one person knocked over a cone . . . the instructors were right, practice does make perfect.

DID IT WORK?

"You bet your bippy!" replied TSgt Dawson. "When I started this course, I was a little angry because I hit all those pylons . . . I know I drive better than that. But now that I can go through at high speed and not hit anything, I feel good about having attended. I admit that when the instructor first told us that we don't really know how to drive, it was like being told you don't know how to make love . . . I just didn't believe it. I suppose it's part of the male make-up, ego maybe, because neither of the girls had any trouble with the course. They just took the instruction and went out and did it. They had nothing to "prove." They knew they could become better drivers. The guys had to be convinced.

"As for myself, the course made me aware of both my own and other drivers' limitations. As a Security Police vehicle driver, I know I have to be a professional at all times. If you're not professional, people won't have any respect for you either as an individual or as a security specialist. I enjoy my job and its responsibilities, and I want to be good at what I do . . . we all do. This course helped me achieve one facet of professionalism, and I only wish that the CHP could give the course to everyone. Right now, we're the last Air Force class that the CHP will be able to accept because of their own training requirements."

Both Colonel Ahner and TSgt Dawson wanted to emphasize that it's the instructors that make the course as good as it is. All the students agreed that the instructors made them reach a little deeper into themselves . . . reach in and get that extra effort needed to complete this difficult course.

TIPS FROM THE PROS

What can the average driver learn from the CHP course? We asked Lt Ken Norris of the CHP Academy that question and he gave DRIVER the following tips taken from EVOC training:

- Parallel parking . . . pull in very close to the front car, crank the wheel hard over when your rear wheel is at his bumper (or when *you* are even with his windshield), turn the other way when your passenger side fender aligns with the other car's rear fender.

- When driving through tight quarters, use your driver's side fender as a guide . . . keep that fender as close as possible to the obstructions on the left, and you'll have no trouble negotiating narrow areas. (That's assuming you've already determined that your car will fit through the area!)

- Remember that slowing down isn't *always* the best way to get out of a skid . . . sometimes a *slight* application of power will work better. In an emergency situation where time is critical, this can be better than slowing way down and then trying to get started again.

- When taking a curve, try to "apex" it in your mind, that is, square it off. Instead of several corrections with the wheel, set up so you turn the wheel only once. It saves both gas and tires, and will allow you to accelerate sooner.

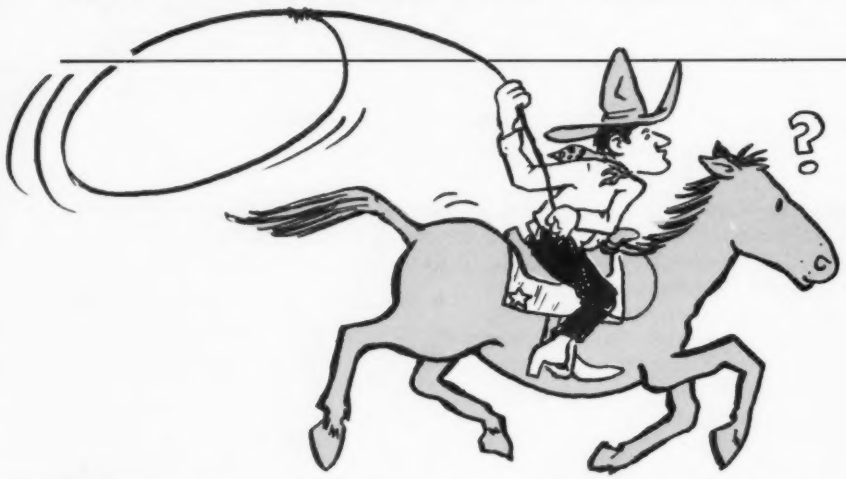
- Drive with your window open slightly. Sirens aren't effective against a steel and glass cocoon. You'll hear those emergency vehicles sooner, and be able to take evasive action sooner.

One final note . . . DRIVER rode with the McClellan SPs during a typical nighttime patrol. We were amazed at the amount of verbal abuse the patrolmen were subjected to. One NCO, stopped for running a red light, acted as though the Security Police had a personal dislike for him and had signaled him out for harassment. 'Tain't so, people. The SP stopped the individual because he had committed an error in judgment by running the light . . . no other reason. So, as a favor to DRIVER, if you are ever stopped by the SPs, do them and yourself a favor. Be polite, not abusive, and try to realize that part of their job is to see that you don't injure yourself or someone else by doing something contrary to either the laws of the land or the laws of good judgment.

"We're here to help you" isn't just the by-word of the IG. The Security Police use it too, and mean it!

(DRIVER salutes the Air Force Security Professionals, and in particular Colonel Lyle Ahner, TSgt Don Dawson, and the men and women of the 2852d Security Police.)

THE BACKYARD MECHANIC



TIRE ROUND

What is toroidal in shape, a flexible-membrane pressure vessel mechanically, a high-performance composite structurally, and a unit composed principally of long-chain macromolecules chemically?

If you said a computer-designed atomic reactor, you're wrong . . . the object described is a tire! That's right, folks. Tires have evolved from the 1907 treadless to today's high-performance, ultra-complicated, super-sticking, long-wearing hunk of poly-butadine/styrene/butadine.

Well, what does all this mean to you, the tire user? It means the casualness with which we used to pick out a new set of shoes for our cars is no longer acceptable in terms of buying exactly the type of tire we need.

If you haven't already, this is the time to take a good look at your car's tires. You want to make sure there's plenty of tread and that the tires are wearing evenly. Uneven wear is no biggie—just a few bucks at the local alignment and balance shop. But if the tread wear indicators are showing (solid bands of rubber across the tread, see drawing) then you're low on tread and in definite need of new rubber.

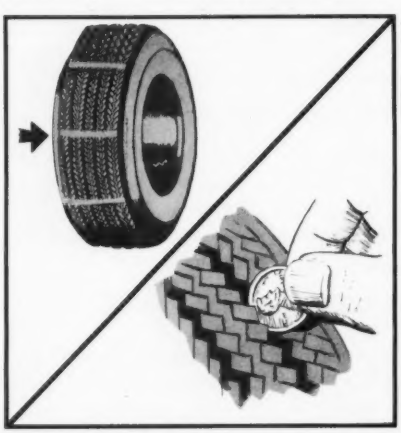
Now don't start groaning thinking about the cost of new tires because we've got good news for you. The price of tires has increased only about one-quarter what the cost of other goods and service increased in the last five years. So smile as you fork over your life savings for a set of tires. You're really getting a bargain.

If you're in need of tires, chances are you're thinking radial. The radial revolution has really taken the country by storm in the last two years with many new cars coming with radials and nearly all new cars equipped with radial-tuned suspensions. And with the gas prices up and not ever coming down, most everybody knows about the fuel-saving effect of radials.

However, there are some considerations with radials that we need to talk about as well as some other tire information you may find helpful. First, let's define our terms.

TIRE TYPES

"Bias," "belted," and "radial" are probably familiar terms to most of you if you've checked into tires in the last few years. These terms actually refer to the tire's ply construction. However, the real difference between these tires are the handling characteristics, thread strength, tread mileage, and price.



Two ways to tell when it's time to re-tire are shown above. (Left) Built-in "wear bars" appear as smooth bands across face of tire when only 1/16 inch of tread remains. (Right) Insert a penny in tread groove. If top of Lincoln's head shows, tread is worn below 1/16 inch, the danger line.

The bias-ply or conventional tire is the lowest priced tire, but offers the least tread mileage at the highest cost per mile. The bias tire is best suited to light around-town type driving. It wears quickly and is most prone to failure under hard use.

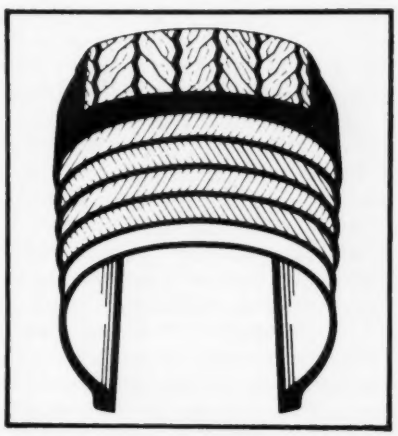
The bias-belted tire is simply an improvement on the conventional tire. It uses special cord belts underneath the tread to add strength and stability to the tread. The belted tire is stronger and offers better handling and tread mileage than the conventional tire. It is standard equipment on new cars that do not come with radials.

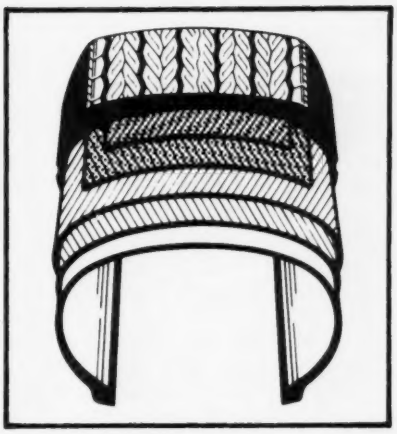
BELTS

Now that belted and radial tires (also belted) have overtaken the tire world, the question of belts is bothering some people. For instance, many people think a belted tire is always fiberglass-belted and a radial must be made with steel. Actually, the tread support belts used in both of these tire types may be rayon, polyester, fiberglass, or steel. The difference is the strength, guarantee, and price of the tires, depending on the type of belts used.

An all-fabric tire is usually less expensive, but carries less of a guarantee than a tire belted with fiberglass or steel. Steel is considered to be the strongest belting material,

UP





The difference in construction between bias-ply tires (left), and radial tires (right) is apparent in this cutaway.

but is also the most expensive. Fiberglass generally runs a pretty close second to steel in both strength and price.

The important point is to know that there is a difference in the construction of belted and radial tires. This is especially true with radials—many people buy radials assuming they are steel-belted when they may be an all-fabric tire. A tire dealer can explain a particular tire's construction and relative advantages, so you can choose the tire which best fits your needs and budget. The tire's construction along with plenty of other valuable info about the tire is also clearly molded into the sidewall of every tire made since 1968.

RETREADS

If you're strapped for money, consider retreads. They cost only about half as much as new tires but provide the same guarantee.

Retreads are offered in radial, belted-bias and bias-ply construction in almost all sizes. They cost so much less than a new tire because the original tire body is reused. The tire body is the major cost of a tire. Before a tire body is reused, it is subject to a meticulous inspection to be sure it is not damaged. A new tread then is applied and it is bonded to the body under heat and pressure in a vulcanizing press.

Retreading is simply a form of recycling, of reusing materials which otherwise would be scrapped.

One item that still baffles the average tire buyer is the current tire size-service designation code. Basically, the new code indicates the very same thing the old code did, but in a different way. For instance, if a tire was labeled 7.75-14 under the old system, you knew it was about 7¾ inches wide and fit on a 14-inch rim.

A popular replacement size for that particular tire would be labeled F78-14 today. The 14 means it fits on a 14-inch rim, as before, and the F refers to the tire's size—the equivalent of a 7.75 in this case. The number following the letter is an addition to the old code, and is the information you need to be most concerned with. This is the aspect ratio, or the tire's body height compared to its width. In this case, the tire is 78 percent as high as it is wide.

Some foreign-made radials use a special coding system which combines metric measures and inches. A tire dealer can explain this system, as well as the standard code if you are unsure of what tire you need. The tire size comparison chart should further clarify exactly how the current tire codes work.

PROFILE

The aspect ratio or profile of a tire is especially important because of the recent trend toward lower, wider tires, or "low-profile" tires, as they are called. There are several good reasons for this change in tire design. Essentially, a slightly lower, wider tire lowers the car's center of gravity and puts more rubber on the road for safer, surer handling under nearly all conditions. The aspect ratio is what indicates the tire profile—the lower the aspect ratio, the wider the tire. For instance, a 70-series tire is wider than a 78-series. Tires are made in the super-wide 60-and 50-profile series. However, 70 is generally the lowest profile size suited to "normal" driving.

When you're ready to replace tires, you may want to consider going to lower-profile tires. In most cases this will improve your car's handling and is well worth the additional cost. However, before replacing standard-size tires, check your owner's manual or with a reputable tire dealer for the recommended replacement size on your car. In some cases, a wider-than-standard tire is not recommended. Also, you should not mix tire sizes or profiles at any time.

CONSIDERATIONS

There are a couple of important considerations when equipping a car with radials. Although radials

continued

are the best performing tire going, they may not be as well suited to certain types of heavy use as a belted tire.

Radials also should not be installed on a car with a worn or damaged suspension system, and they should always be used in a complete set. For best all-around safety and handling, it's now recommended that tire types not be mixed on a vehicle at any time. This is especially true with radials because of their radically different handling characteristics—radials should never be used with any other tire type. Manufacturers now warn against mixing any tires—especially radials—of different sizes, profiles, constructions, and tread design at any time.

ROTATION

Another radial question which was resolved a couple of years ago is that of rotation. Following extensive controversy and resulting study, a new plan of rotation for bias and belted tires, and a separate rotation pattern for radials was adopted by the tire industry. Most manufacturers are now recommending rotation of conventional and belted tires every 6 to 8 thousand miles following the pattern shown in the illustration to maximize tire mileage.

The manufacturers' recommendations for rotation of radials varies, however. Some companies specify regular rotation, while others recommend rotation only if uneven wear develops. Your best bet is to check with your dealer before rotating any radials. Also, the rotation pattern for radials must be used to prevent serious tire damage. We have included a partial list of some popular manufacturers' rotation recommendations for radials.

INFLATION

Maintaining proper tire pressure is the most important factor in maximizing tire life as well as gas mileage. However, many people don't realize that there isn't any one correct inflation pressure. The pressure recommendations given in the owner's manual are for normal driving conditions—this excludes sustained highway speeds or extra weight in the vehicle. Studies have also shown that the manufacturers' recommended inflation levels may be a bit low in many cases. An improvement in handling and tread mileage can usually be achieved by inflating the tires from 2 to 4 pounds over the normal recommendations—especially with radials. You should check with your tire dealer for the *tire* manufacturers' recommended inflation levels for your car—these may differ from the car-maker's specs. Also, you can experiment to find the best inflation levels for your car's tires, as long as you don't exceed the tire's maximum inflation level (shown on the sidewall) or go under the minimum recommended by the car manufacturer.

Inflating the tires about 4 pounds over the regular pressure for sustained high-speed driving, as recommended in your owner's manual, is also essential for maximizing tire mileage. This allows the tire to run cooler, decreasing wear and the chance of tire failure. However, be sure not to exceed the maximum inflation level.

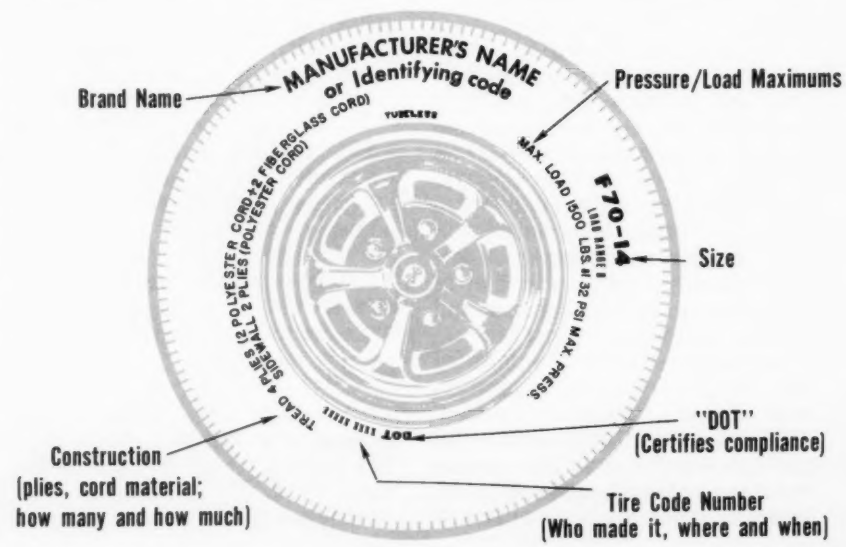
LOAD / OVERLOAD

Adjusting tire inflation levels for carrying loads is also an important but overlooked factor in good tire mileage and safety. Most people know that driving with underinflated tires causes excess tread wear and dangerous handling characteristics, as well as making the tires prone to failure. But most people don't stop to think that overloading their car's tires has exactly the same effect as having underinflated tires.

To keep from overloading your vehicle's tires, first check the tire's load range and load-carrying capacity in your owner's manual or on the tire's sidewall. Nearly all passenger car tires are load range B, which means they have a maximum inflation of 32 psi. The load capacity varies according to the tire's size, however.

To determine a vehicle's total carrying capacity, simply multiply by four the load capacity shown on the tire's sidewall. For instance, an F78-14 tire has a carrying capacity of 1500 @ 32 psi. This means the vehicle's total carrying capacity is 6000 pounds (4x1500) when the tires are at their maximum inflation. The maximum weight and/or inflation levels should never be exceeded on any vehicle.

In many instances, however, you will have additional weight in your vehicle—but less than the maximum capacity. In this case, you will have to compute the correct inflation pressure for carrying the specific load. To do this, simply add the vehicle's weight (shown in your owner's manual) to the weight being carried, including the passenger



weight. Then check the total weight on the inflation chart to determine the correct inflation levels for your car's tires to safely accommodate the load. A tire dealer can also give you the correct tire pressures for a specified load in your vehicle. Finally, it's important to distribute any additional weight as evenly as possible in the vehicle.

INSPECTIONS

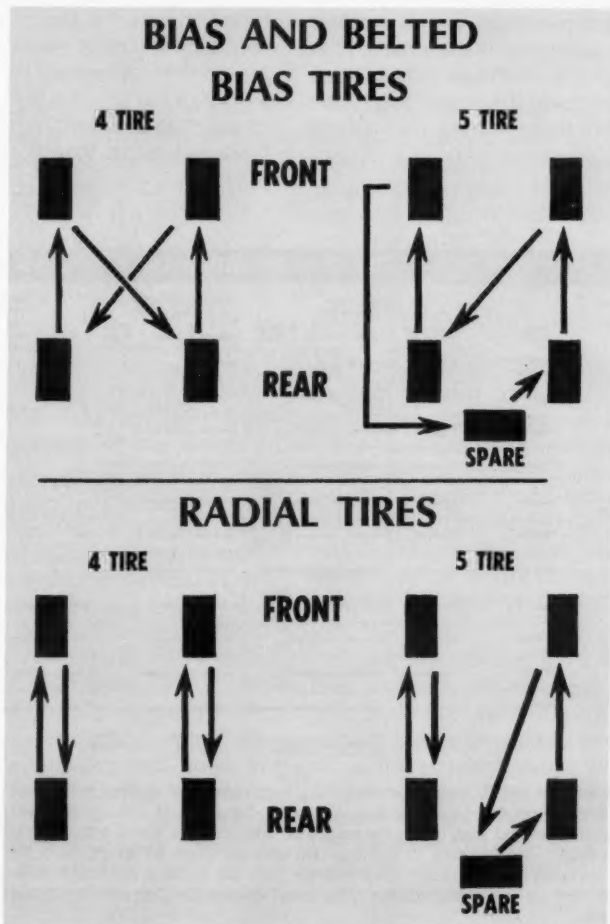
Along with maintaining correct inflation pressures, regular tire inspections are an essential part of tire maintenance. Tires should be replaced, and *must* be in many states, when the tread wear indicators (smooth bars across the tread) are showing, or when there is less than 1/16-inch of tread in any two adjacent grooves.

You should check regularly for fabric breaks, cuts, or any other tire damage. Also, it's important to be alert for unusual wear caused by misalignment of the front end, out-of-balance wheels, weak shocks, or improperly inflated tires. Many tire shops now offer free, regular inspection and rotation when you buy new tires. Even if your shop offers this valuable service, it's still in your best interest to get in the habit of checking your tires' inflation pressure and general condition at least every two weeks. The accompanying list of tire tips should help you get at least a warranty's worth of safe, happy tire miles.

TIRE TIPS

- New tires should always be given a proper break-in—limit speed for the first 50 to 100 miles. This allows the tire to slowly adjust to the heat and stress of driving. Breaking-in radials is especially critical since they may exhibit inferior traction until their special rubber compounds adjust to heat.
- Buy a good tire pressure gauge and use it regularly. Service station gauges may be off from 2 to 15 psi.
- Check inflation with the tires cold—after they have been sitting at least 3 hours—not warm or hot after driving. The recommended inflation is based on a cold tire. Hot tires build up an extra 4 to 8 pounds of pressure.
- For steady, high-speed driving add 4 to 5 psi to the recommended air pressure. But *never* inflate above the tire's maximum pressure, usually 32 psi (cold reading).
- If one tire continues to need air, it may have a leak, bent rim, cracked valve stem or a faulty valve core. Refill it to the right pressure, but check it again after a few hours
- When you check tire pressure, also check the spare. Nothing—not even running out of gas—is as foolish as a $50 tow charge because your spare is flat.
- Vacation trips usually mean heavy loads. Make sure the weight is distributed as evenly as possible in the vehicle. Be sure to adjust the tire pressure to accommodate the extra load.
- Form the habit of looking at your tires—tread surface, shoulders, and sidewalls for inflation. Radials always appear to be underinflated—but don't let that fool you into driving with a tire that's really under.

continued



(right)
New tire rotation plan. Here are the new patterns of auto tire rotation recommended by the Tire Industry Safety Council for safe, even wear and long mileage. Tires should be rotated every 6,000 to 8,000 miles, or sooner if irregular wear begins to develop.
Source: Tire Industry Safety Council, Washington, D.C. 20004

SPECIAL RADIAL TIRE SECTION

■ Check front-end alignment frequently, especially if you notice uneven tread wear or "pulling" to one side while driving. Back roads or a few solid bumps on any surface can throw off the alignment.

■ If you notice abnormal tread wear or seem to be getting a bad ride, this is a good time to have your tires balanced.

■ Check the tires regularly for wear and remove any debris such as embedded glass or stones.

■ When you buy new tires, have the old valve stems replaced. Valve stems can crack, become brittle, and wear out. A few cents for a new valve stem is a very good investment. Metal stems are probably the best bet.

■ Driving on snow tires for any prolonged period in warm weather is poor economy. Abnormally high heat buildup in these thicker tires can wear down the tread faster than in regular tires. It may also cause sudden failure.

Radial ply cords run straight from bead to bead with stabilizer belts applied directly beneath the tread.

Q. What makes radial tires different from conventional tires?

A. Their construction. Conventional bias or bias-belted tires have fabric cords in their body plies which criss-cross each other from tire edge to tire edge.

In a radial tire, the body cord runs straight up and over in hoop fashion from rim edge to rim edge. Since there is no angle to the cord fabric, the tires' sidewall has greater flex and the sides tend to be rounder. A radial tire also has strong belts under the tread.

Q. What are the advantages of radial tires?

A. Basically, there are three. Radials have greater mileage potential than conventional tires. Because a radial has strong belts and a flexible sidewall, the tread rides firmly on the road surface. Tread squirm can rob tires of potential mileage; radials help eliminate this problem.

Drivers also notice improved handling characteristics with radials because of the tires' sharp steering response.

Another advantage of the radial tire is the riding smoothness on the highway. (Some older cars may ride a bit harsher with radials because their suspension was initially designed for conventional tires.)

An additional consideration from the safety standpoint would be the fact that steel-belted radials have more resistance to punctures in the tread area when compared to conventional tires.

Q. How does the cost of radial tires compare to other types?

A. Initially, the cost is higher because it is a more expensive tire to manufacture. There are more components, adding to labor costs. The materials used are more expensive, because they are designed to last longer. But the radial has a longer life-potential than conventional tires, and motorists should consider that fact along with improved handling characteristics and better ride when comparing costs.

Q. Do you really get fuel savings by using radials?

A. Yes. It takes considerably less power to roll a radial tire. Because of the tires' flexible sidewall con-

TIRE COMBINATIONS

Construction ↓ / Series (Profile) →	Bias on Front (Read down for rear): Conventional* (83 Series)	78 Series	70 Series	60/50 Series	Belted Bias on Front (Read down for rear): 78 Series	70 Series	60/50 Series	Radial on Front (Read down for rear): Metric*	78 Series	70 Series	60/50 Series
Bias on Rear (Read across for front) — Conventional* (83 Series)	Preferred	Acceptable	NO	NO	Acceptable	NO	NO	NO	NO	NO	NO
78 Series	Acceptable	Preferred	Acceptable	NO	Acceptable	NO	NO	NO	NO	NO	NO
70 Series	Acceptable	Acceptable	Preferred	NO	Acceptable	Acceptable	NO	NO	NO	NO	NO
60/50 Series	Acceptable	Acceptable	Acceptable	Preferred	Acceptable	Acceptable	Acceptable	NO	NO	NO	NO
Belted Bias on Rear (Read across for front) — 78 Series	Acceptable	Acceptable	Acceptable	NO	Preferred	Acceptable	NO	NO	NO	NO	NO
70 Series	Acceptable	Acceptable	Acceptable	NO	Acceptable	Preferred	NO	NO	NO	NO	NO
60/50 Series	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Preferred	NO	NO	NO	NO
Radial on Rear (Read across for front) — Metric*	Acceptable	Acceptable	Acceptable	NO	Acceptable	Acceptable	NO	Preferred	Acceptable	Acceptable	NO
78 Series	Acceptable	Acceptable	Acceptable	NO	Acceptable	Acceptable	NO	Acceptable	Preferred	Acceptable	NO
70 Series	Acceptable	Acceptable	Acceptable	NO	Acceptable	Acceptable	NO	Acceptable	Acceptable	Preferred	NO
60/50 Series	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Preferred

* See Size Comparison Chart

Preferred — Acceptable — NO NOT RECOMMENDED

In the past, the tire industry generally has recommended against mixing of tire types, profiles, and sizes on the same vehicle. However, because of the completion of some recent studies that indicated that gross mismatch of tires causes more serious problems than previously thought, the industry is coming out with an even firmer position against mismatching. The industry now strongly recommends that car owners stick with the equipment originally specified by the manufacturer. This chart shows the only mixes considered acceptable at this time.

struction, squirm and hysteresis* are reduced, thereby decreasing rolling resistance. A general rule of thumb for gasoline savings is from five to seven percent, assuming alignment and tire pressures are spot on.

Q. Do I still need winter tires?

A. Yes. Although the sidewall and tread flexibility of radials allows them to "clean out" their treads better than conventional tires, there is still no satisfactory substitute for snow tires if you want to have the utmost in handling and stopping power in ice or snow. Of course, we all know that you can't mix radial and conventional tires, so be sure to buy identical tire types all around.

Q. Do inflation pressures for radials differ from conventional recommendations?

A. No. maintain air pressure in radials at levels suggested by the tires' manufacturer for the weight of your particular car. Because of the radials' unique sidewall design, it's almost impossible to judge proper inflation pressure visually. Rely on tire gauges for exact pressure readings.

Q. When is a steel-belted radial tire not a steel-belted radial tire?

A. When the steel belt is made of steel mesh rather than individual steel wires. If you have a cheap set of steel-belted radials and they don't show you the handling improvement you thought they would, read on . . .

**Hysteresis (his' te re' sis))—The dictionary defines hysteresis as "the time lag exhibited by a body in reacting to changes in forces which affect it." What it means to you, the tire buyer, is the amount of heat generated by the flexing of a tires' sidewalls. It takes less energy and generates less heat to flex a radial tire, so heat losses (hysteretic losses) are less. Also, see DRIVER, Dec '75, page 11.*

The important features of a top-quality radial are the method of molding and the use of steel wire rather than mesh. The two methods of molding are "clamshell" and "segmented." DRIVER talked to a tire engineer at Firestone and he explained the difference:

"The clamshell method is the conventional method of molding tires, and it is done by expanding the tire in a fixed mold. In the segmented method, the mold is brought in several pieces to meet the tire. The segmented method provides much greater accuracy but, as with most good things, it's more expensive.

"Most quality radials use the segmented method of construction, along with steel wire instead of mesh. There are several classes of radials, so let me explain them.

"Class one is defined as a textile radial tire where the sidewalls and reinforced belts are of a nonmetallic material such as rayon or polyester. They are molded in the same fashion as a conventional tire, taking advantage of the fact that the fabric will pantograph (make a parallel, duplicate movement), allowing the tire to be expanded to a fixed mold. The mold for this elementary form of radial construction is called watch case, two-piece, or clamshell in the industry.

"Class two contains all of the class one's production procedures but the addition of a strip of wire mesh before the tread application acts as a restraining device. In effect, this gives the manufacturer the excuse to label the finished product as a steel-belted radial. It should probably be called a 'steel-reinforced textile radial'.

"Class three is defined as a steel-belted radial having two belts of wire mesh manufactured in a two-piece mold. A high percentage of factory 'seconds' is a result of making a two-ply steel radial in a two-piece mold. Problems encountered are ecliptic belts (causing steering wheel oscillations), balancing difficulties, amplification of road resonance, and premature wear at certain points on the tread.

"Class four refers to 'segmented' molds that travel in pieces to meet the tire carcass. With this method, the chance for error is almost zero, and an out-of-round tire is almost unheard of.

"You can tell a two-piece molded tire by the thin mold line or ridge that appears along the radius of the tire, usually in the center of the tread.

"Segmented tires can be identified by segmented molding marks going diagonally from the tread section to the bead section. There will usually be five or six of these equally spaced lines on a tire.

"Also, the segmented method allows a larger area or width of steel under the tread. Some low quality steel radials have belts that are only 2.75 inches wide! That's not much protection."

Q. What about these rumors of radials failing at high speeds?

A. Some of them are true, but let us qualify that answer. There is always someone who will drive on a tire at a greater speed than it is rated. Some police departments initially bought "high-speed" radials and experienced failures. It was found that most of these failures were in the 110 to 115 mph range, and that the tires were rated to only 80 mph!

There are several tires available that are truly high-speed radials, and if you're considering racing or just want the added protection of a high-speed-rated tire, you might consider them. Among these are the Michelin XVS and the Pirelli CN 75. Most major American manufacturers also make high-speed-rated radials.

TIMELY TOPICS

NEW AUTO I.D.

To allow faster recalls of defective cars and auto equipment, Vehicle Equipment Safety Commission—a Federal chartered standard-setting group—has developed a new identification system for all cars and recreational vehicles.

Beginning with 1979 models, a new, 15-character serial number will appear on each car. First three digits will designate the manufacturer; second three numbers, the car line and body type; seventh, the engine size; eight, model year; and ninth, the plant of origin. Digits 10 through 15 will identify the individual car.

NO BUZZ FROM BEER?

Six of every 10 people killed in drunk-driving accidents are *still in their teens!*

Young drivers simply don't believe that beer—their favorite alcoholic beverage—is intoxicating. Almost half of the teen-age drivers in a recent survey said they believed they could drink five to seven cans of beer without becoming drunk enough to affect their driving. Of course, this is not true.

Young drivers also put too much faith in black coffee and cold showers as sobering agents. Time alone reverses the blood alcohol level and the degree of drunkenness.

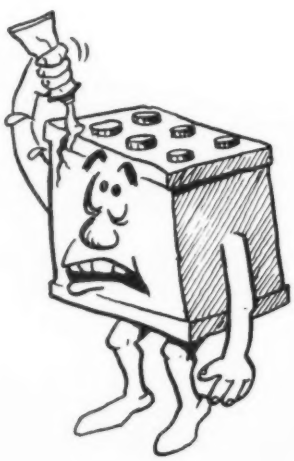
CRACKED BATTERIES

If you find your battery case is broken or cracked, replace it with a new battery. After a battery has had the electrolyte added, there is no safe procedure for sealing cracks or breaks.

Some sealing materials appear to hold but may last only a few days. At best they should be used as an emergency procedure. When the sealing materials let go, the electrolyte can damage the car. Even more serious is the possibility that it may come in contact with your skin or eyes.

Under no circumstance should a flame be applied to a battery. Combustible gases from the battery present an open invitation to battery explosion.

To prevent a cracked or damaged battery, make sure it is installed correctly. The battery tray should be clean and free of any loose nuts, bolts, screws or other parts before the battery is set in. Hold-down bolts and clamps should be in place and tightened properly. If too tight, the battery case may be cracked or distorted—too loose and the battery will bounce and move about.



YOUR CAR'S A LIFESAVER

Ever thought of your car as a lifesaver? During emergencies any vehicle contains much hardware for survival.

Your horn can alert rescuers as far as a mile downwind. The flat, round top of the air cleaner can be used for digging trenches or throwing up earthen windscreens.

There's a reservoir of oil under the

hood. A quart burned in a hubcap in the still air of sunrise spews a miniature cloud visible for miles. Every hose converts to a siphon for getting at gasoline. The windshield wiper tubing becomes an effective tourniquet. The hood can be removed and used as a heat reflector behind your fire. If you're lucky enough to have hot dogs or other food along, the dip stick makes a great skewer for cooking.

Your car serves as a bunkhouse. Convex gauge lenses or the dome light's glass can be a sun-focusing fire starter if you don't have matches or a cigarette lighter. A burning tire makes a hot fire that won't go out for three or four hours. For night signalling, remove a head lamp from its housing and direct its beam upward in wide, sweeping arcs.

USE OF SAFETY BELTS

An impressive number of nations have enacted mandatory use laws for safety belts.

Jurisdictions Requiring Safety Belt Use

Since:	
1971	Australia
1972	New Zealand
1973	France
1974	Czechoslovakia
	Puerto Rico
1975	Sweden
	Spain
	Belgium
	Netherlands
	Finland
	Israel
	Luxembourg
	Norway
In 1976:	Denmark
	Switzerland
	Soviet Union
	Ontario, Canada

Interestingly, there has been no word at all that public acceptance in any of these places has been anything but positive. Apparently only in the United States do we drivers take the attitude that it's our business if we want to risk our necks by not using belts and that we don't want the government telling us we have to use them.

"Such a simplistic view of 'individual rights versus government dictatorship' simply isn't valid in the real world," says Fred W. Vetter of NHTSA (National Highway Traffic Safety Administration). "Unless, perhaps, the injured unbelted driver would agree to bear the consequences of his injuries and forfeit his claims to public assistance. What if, instead of being able to rely on city, county, or state assistance, people injured in unbelted crashes were to be 100% financially liable for their own police, ambulance, and hospital costs? For their physical and psychological rehabilitation?"

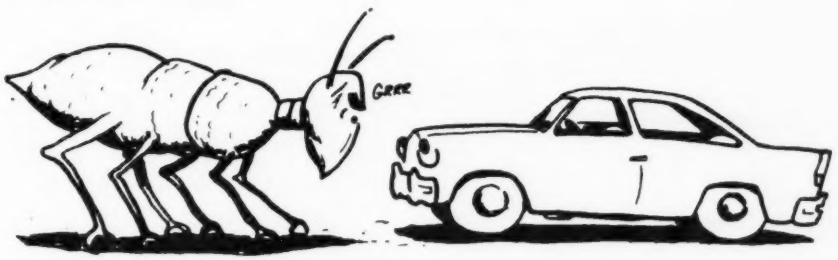
Some of the countries listed above estimate that 90% of their motoring public use safety belts routinely. In the United States, only about 22% of the people regularly use their restraint systems. If we could get the use rate up to 70%, we could save more than 11,000 lives a year, to say nothing of preventing almost a million injuries and saving untold amounts of public and private money.

The safety belt is a simple, proven safety device, already installed and paid for. How about you? Do you use it?

PHOTO CREDITS

For the photographs on our front cover and on page 33, we thank Joe Collaso, 1361st Photo Sq, AAVS, who took the pictures at Valley Forge, Pennsylvania, especially for this issue. George Washington had the main camp of the Continental Army at Valley Forge from December 1777 to June 1778, and many of our images of the Revolution are based on paintings and stories about that severe winter of suffering.

FOUR-YEAR FORECAST FROM DETROIT: SMALLER, MORE ECONOMICAL CARS



Smaller and more economical American-made cars—that's the word from Detroit on new models for 1977 through 1980.

A *Washington Star* report says U.S. auto manufacturers were talking seriously in the early 1970s about ending annual model changes, but the energy crisis caused "The Big Four" to do an about-face in design plans for all future cars.

General Motors will be making the biggest changes. In 1977, all standard-size GM cars are being shortened a foot or more and up to 1,000 pounds in weight lopped off. This includes the so-called B and C body models like the Chevrolet Impala, Pontiac Bonneville, Buick Electra, Olds 88/98, and Cadillac.

GM's big 550/455/454-cubic-inch V-8 engines will be gone, replaced by 400/425-inch engines expected to get three more miles per gallon of gas.

Ford's changes in 1977 will include a "re-skin" of its intermediate Torino/Montego-size cars and some name changes. Imports of the Ford Fiesta minicar also will begin.

Chrysler will expand use of its Electronic Spark Advance engine system, while AMC will begin offering a 2.0-liter four-cylinder Volkswagen Audi engine in the Gremlin.

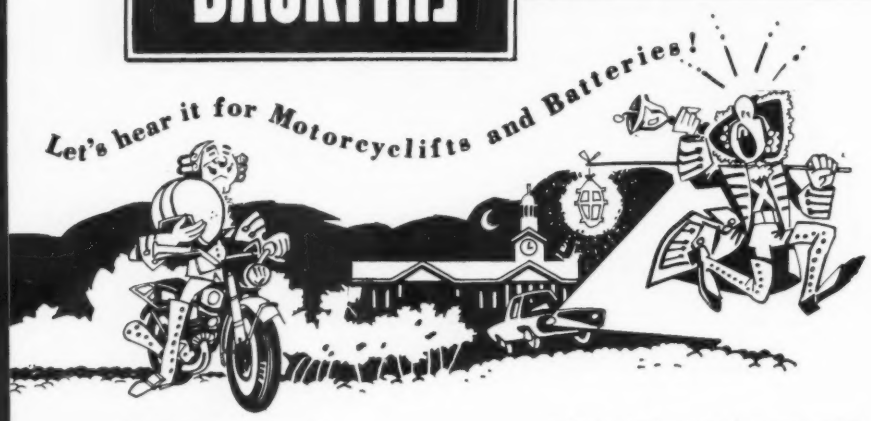
In 1978, GM plans to produce scaled-down intermediate cars; Ford says it will have a new line of compact-size cars, including a wagon; Chrysler expects to have a new four-wheel-drive mini-car ready; and AMC will have a wagon version of its Pacer.

For 1979, GM will introduce its new L Body small-car line, featuring front-wheel-drive engines, as a replacement for its present X Body compacts. Ford will have new small-car lines, possibly including assembly of its Fiesta car in this country.

Chrysler will offer redesigned, smaller intermediates and full-size cars in 1979-80, based on its new Plymouth Volare and Dodge Aspen models. Ford may also scale down its full-size cars in 1980.

BACKFIRE

Address your letters to:
Editor
DRIVER Magazine
AFISC/SEDD
Norton AFB CA 92409



COMMENTS FROM A NON-MOTORCYCLIST

After reading the article "Rolling in the Rain" and the "Backfire" letters about motorcycling (Jan '76 issue), I think it is about time the auto driver should listen to a non-cyclist. Motorcyclists are safe, courteous drivers who will stop and help the motorist if he is stranded on the highway with his car.

I was stranded once and three police cars passed, and I had been there an hour and 45 minutes. Then this cyclist stopped and gave me a hand. He knew a lot about an auto, and I was on the road again in five minutes.

I have also met members of several motorcycle clubs. They are very strict on the subject of safety – both the safety of their cycles, and in relating to the motorist on the highway.

They deserve a lot of credit wherever they are. You will see them dressed in a lot of different ways – some with long hair, some with modified bikes. Yet not all cyclists are what most motorists call freaks – it simply is their thing.

As Editor of DRIVER, bring us more on the subject of the motorcyclist so we will learn more about this subject.

SSG Bradley L. Wilson, USA
Hdqts Co USAG
Ft George G. Meade, MD 20755

What you say is quite true, Brad. Most motorcycle clubs we know are big on safety, and many make it a practice to help the motorist in trouble.

TIPS FOR BATTERY PROBLEMS

I just read your article "Jump Starts" (Mar '76 issue of your fine magazine which I read religiously). I'd like to add a tip or two that I've found helpful.

1. Check for corrosion on the terminals and clean if time permits and the proper tools and baking soda are available. This gives the engine a fighting chance and usually is time well spent. Check cable routing, and insure that the positive cable isn't in close proximity with the belts or exhaust manifold. One thing to watch for on GM products is to insure the small wire going to the positive terminal is making good connection – otherwise the starter won't energize.

2. After the battery has been at least partially charged and has been eliminated as the possible culprit, the poor man's method of checking for a current draw is to remove the positive terminal. Make sure everything is turned off. Gently return it to the post, watching for a spark. If there is none, there is no current draw and the problem should lie in the charging circuit. A random arc might be caused by the clock solenoid winding up and is normal. I've found the usual culprits to be glove box lights and the associated switch not opening the circuit properly, and/or under-hood and trunk lights not turning off. Another possibility is a defective brake light switch. (Don't laugh – I found this running down the battery on my vintage '35 Plymouth. The brake lights were too dim to detect in daylight.)

Keep up the good work.

SSgt Orin A. Tooker, USAF
Luke AFB, AZ 85309

Thanks for the tips. We're sure our readers will appreciate them.

EMERGENCY VEHICLE TRAINING

In the Jan '76 issue, the article "Emergency Vehicle Training" was read with great interest by personnel of this office. One of the title lines on page 27 stated: "All military drivers are expected to comply with the tri-service publication for emergency vehicles."

A thorough review of directives/publications files at this command as well as those of neighboring Air Force and Army activities failed to produce a publication considered to be the one mentioned above.

In an effort to increase emergency medical treatment and services provided to personnel, efforts are underway locally to establish a comprehensive training program for emergency vehicle operators and attendants.

The above mentioned publication could have specific information that could, or possibly should, be applied to this program. In this regard, could you supply me with the exact title and publication number and the source of this publication?

HM2 Richard G. Loper, USMC
3d Marine Division (Reinforced)
Fleet Marine Force
FPO San Francisco 96602

As you noticed in the article, this type of training is now required of all emergency vehicle operators in all services. D.O.D.I. #1000.14 and Joint Service Reg. 77-310 both specify that the training will take place, but neither manual specifies how to accomplish the training.

From what we can determine, it will be the responsibility of an organization's functional manager to decide if training is needed, and also to decide exactly how training is to be accomplished. In the Air Force, this training will be conducted at the local level by a qualified trainer from the Motor Pool and funded out of local monies.

March AFB was fortunate in that they are situated very near Riverside Raceway and could easily schedule the training. As your organization is not as fortunate, you will probably have to complete the training with local personnel as instructors.

As to what constitutes a "qualified" instructor, we don't really know. We suspect that it would be someone licensed by the state as an instructor in the actual field of emergency vehicle operation.

JSR 77-310, Vol. I should be in the field about now, and perhaps it will clarify the situation.

We're sorry we can't give you any more information, but we hope we've been of some help.

JACKED BACK

I think that your magazine is the best magazine around covering the subject of automobile driving, bar none. Your repeated attempts to "set the record straight" concerning various misconceptions about cars and driving characteristics (as well as cycles and riding) are highly commendable.

I especially appreciated the February article, "Jacked Back." I wanted to make copies of the article and distribute them to the windshields of vehicles which are suffering under their owner's misconceptions, and to the hospital beds of owners who are suffering the results of not knowing the dangers of jacking the rear end.

How about the poor souls who jack *both the front and rear end up?* What do they possibly hope to gain?

Again, thanks for printing the article, and for publishing such an outstanding magazine.

Lt(jg) Keith E. Murray, USN
USS CONYNGHAM (DDG-17)
FPO New York 09501

Thanks for the compliments, Keith. It is surprising how many guys still jack their cars – a fad that originated in the fifties, and, as you point out, is very hazardous. We hope our article will do some good in alerting drivers to the dangers associated with jacking.

CB RADIOS

This is KZA-4296, "The Big Bug." I enjoyed your article on CB radios, but think you should have told your listeners the severity of the punishment for operating a station without a license – like a fine of up to $10,000, a year in prison, or both. Also, that both mobile and base rigs have to be registered with the Base Frequency Management Office. We had to wait four months for our numbers instead of the two weeks

that you mentioned because of all the new applications being processed. We sure have heard a lot of new handles lately, especially since Christmas. I'm sure that you know that all of us CBers have to cooperate when we're on the channel. Remember, courtesy is contagious.

Well, DRIVER, we're going to back 'em on down now. 7's and 3's to you and pass those other good numbers around where they belong. We'll catch you later, 10-4? This is KZA-4296, "The Big Bug." We're clear and on the side.

MSgt Bernard L. Bugbee, USAF
USAF Regional Hospital Eglin
Eglin AFB, FL 32542

DRIVER felt that a simple warning and threat of Federal involvement would suffice for those who would listen. The registration requirements "The Big Bug" mentions are just now getting out to the field and will be published in base papers ASAP.

DRIVING IN JAPAN

Your "Driving In Japan" article (Mar '76) brought back some fond memories of my previous duty station at COMSCFE Yokohama. Having survived the frustrating driving conditions for four years without a dent or scratch on the '65 Olds can be attributed only to good defensive driving habits.

If I may add, the following tips are offered. Under the Japanese law, pedestrians under the age of 12 or over 60 years old are not considered responsible in case of an accident. A taxi will stop anywhere, anytime – to pick up a fare – no signal, no moving over, just a screeching halt. U turns are made almost any place by anybody, including those big, long, double-clutching delivery trucks. If a U-turn maneuver necessitates blocking traffic in both directions, all that is required are little courtesy nods (at least three times) from the driver signifying "domo-domo" or "gomenasai," and he's in like Flint. Tailgating or following too closely is a tradition – but stay clear of "honey-bucket" trucks, unless you have a gas mask handy. At an intersection, the

one who nods first has the right of way. In two-lane traffic with four cars abreast, trying to make a left or right turn, the car whose bumper is ahead or sticks out most has the right of way.

Driving conditions are really not that bad. The Japanese people are very polite and courteous socially . . . but hell on wheels. Sooo . . . bite your tongue, remain calm, learn to control your emotions, cultivate your other virtue (patience), and drive defensively. Remember, you're a foreigner, so dig that new experience and have a nice tour!

CW03 H. B. Alvarez, SC USN
NAS Whidbey Island
Oak Harbor, WA 98278

Thanks for your interesting comments!

continued from page 13

Three's not a crowd when you're water skiing. That's how many it takes—the boat driver, the observer and, of course, the skier. Notice this man's vest. Ski belts look good and are comfortable, but the skier should never think of the waist-circlers as a sure lifesaver. If the fallen skier is injured or unconscious, there's no guarantee a ski-belt will keep his head above water.

- air out the boat for *five minutes*.
- give all low spots the sniff test. If you smell gasoline vapor, continue to air out the boat and look for spills or leaks.
- wipe up spills.

RULES OF THE ROAD

The marine "Rules of the Road" are similar to the rules we use in driving a car. Like the automotive rules, they exist to help everyone avoid collisions and accidents.

There are four different sets of Rules of the Road, and you need only the set governing the area in which you are boating. These are detailed in three Coast Guard booklets:

a. CG-169 Inland and International
b. CG-172 Great Lakes
c. CG-184 Western Rivers

Obviously the Great Lakes rules refer to the Great Lakes and some of the principal river regions close to them. The term "Western Rivers" *does not* refer to rivers in the western United States, but instead to the Mississippi and associated rivers. The Inland Rules apply to all U.S. waters not covered by Great Lakes or Western Rivers rules.

Generally, the International rules apply to waters on the high seas – but like all generalizations, there are exceptions. While having rules with so many variations can be frustrating, it is equally true that the differences represent just plain good sense where they exist. *Wherever* you are boating, find out which rules apply, get a copy, and follow them.

BEHAVIOR OF PASSENGERS

As the skipper, you are responsible for your passengers. Just as you wouldn't let anybody hang out the window or ride on the hood of your car while you were driving down the freeway, you shouldn't allow side straddling or bow riding on a boat. It's not only frowned on by marine law enforcement people, but it's a good way to end up short one passenger.

Good skippers also prevent passengers from throwing cans and trash into the water. Many of our rivers and lakes are in trouble today because of pollution. Don't add to it by careless littering.

BOATING BUG BITTEN YOU?

Our waterways are getting more crowded every year. There *are* dangers and hazards for ignorant and careless people. If this is the summer you discover that boating could be more to you than a passing fancy, why not sign up for one of the U.S. Coast Guard Auxiliary courses in boating safety and seamanship?

Every course (there are five, each designed for a specific interest) is taught by an experienced, qualified Auxiliary member and the only charge is for course materials. Further information is as close as your telephone.

(left)
Fueling is a dangerous operation. The filling nozzle should be kept in contact with the fill pipe to prevent static electricity. In larger boats, keep doors, hatches, and ports closed while fueling, galley fire and pilot lights extinguished.

(below)
Launching the boat from a trailer, usually down a hardtop ramp, can be embarrassing if you're a greenhorn and your audience is a bunch of critics waiting to launch when you get through! Five little rules: 1. Park the car and trailer clear of the ramp area. 2. Release and stow the holddown straps or clamps. 3. One person in the car and none in the boat. 4. While backing down the ramp, have one person direct you. 5. Before you get out of the car, set the parking brake.

HOW BOATERS GET IN TROUBLE

OVERLOADING—each boat has a rated capacity that should not be exceeded.

NO LIFESAVING DEVICE—or failure to use one—small boat operators are required to have a Coast Guard approved Personal Flotation Device for each occupant, the type of PFD depending on length of the boat.

OVERCONFIDENCE—failure on the part of the operator to recognize his and the boat's limitations.

WEATHER—know where storm warnings are and respect them.

INEXPERIENCE—no one should operate a boat unless he knows the basics of proper boat handling.

RECKLESSNESS—speed, sharp turns and inattention are negligence, inexcusable as well as illegal.

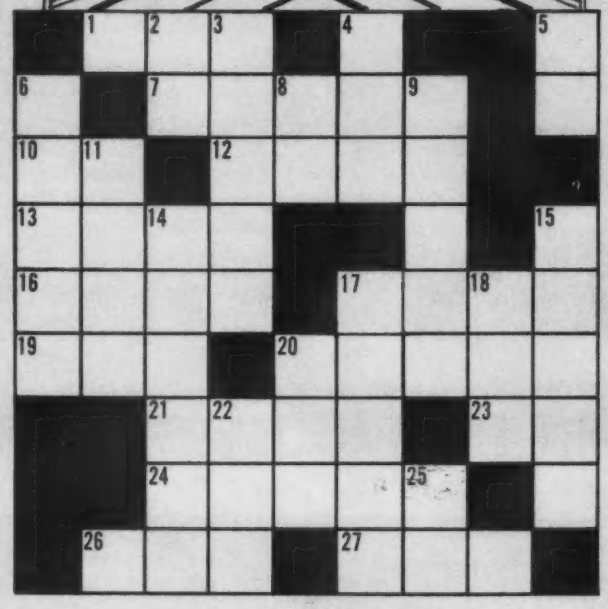
LACK OF COMMON SENSE—think before acting.

IGNORING RULES OF THE ROAD—know and obey the laws applying to area in which you are operating.

ALCOHOL—drinking is as dangerous on the water as on the freeway.

TRAFFIC SAFETY

CROSSROADS



DOWN

2. Elevated
3. Deflate violently
4. Every one
5. Depart
6. Speed Contestant
8. Look!
9. Frozen rain
11. Hired car
14. Wrinkle
15. Tire grooves
17. Passenger
18. Mountain
20. Pull
22. Cut off
25. Sun god

ACROSS

1. Center of wheel
7. Draws along
10. On or near
12. Tumble
13. Autos
16. Leave
17. Back
19. Edge of Wheel
20. Ownership certificate
21. Progress slowly
23. Father
24. Make less high
26. Vigor
27. Run into

ANSWERS ACROSS: 1. hub, 7. pulls, 10. at, 12. roll, 13. cars, 16. exit, 17. rear, 19. rim, 20. title, 21. plod, 23. Pa, 24. lower, 26. pep, 27. ram

ANSWERS DOWN: 2. up, 3. burst, 4. all, 5. go, 6. racer, 8. lo, 9. sleet, 11. taxi, 14. rimple, 15. tread, 17. rider, 18. alp, 20. tow, 22. lop, 25. Ra

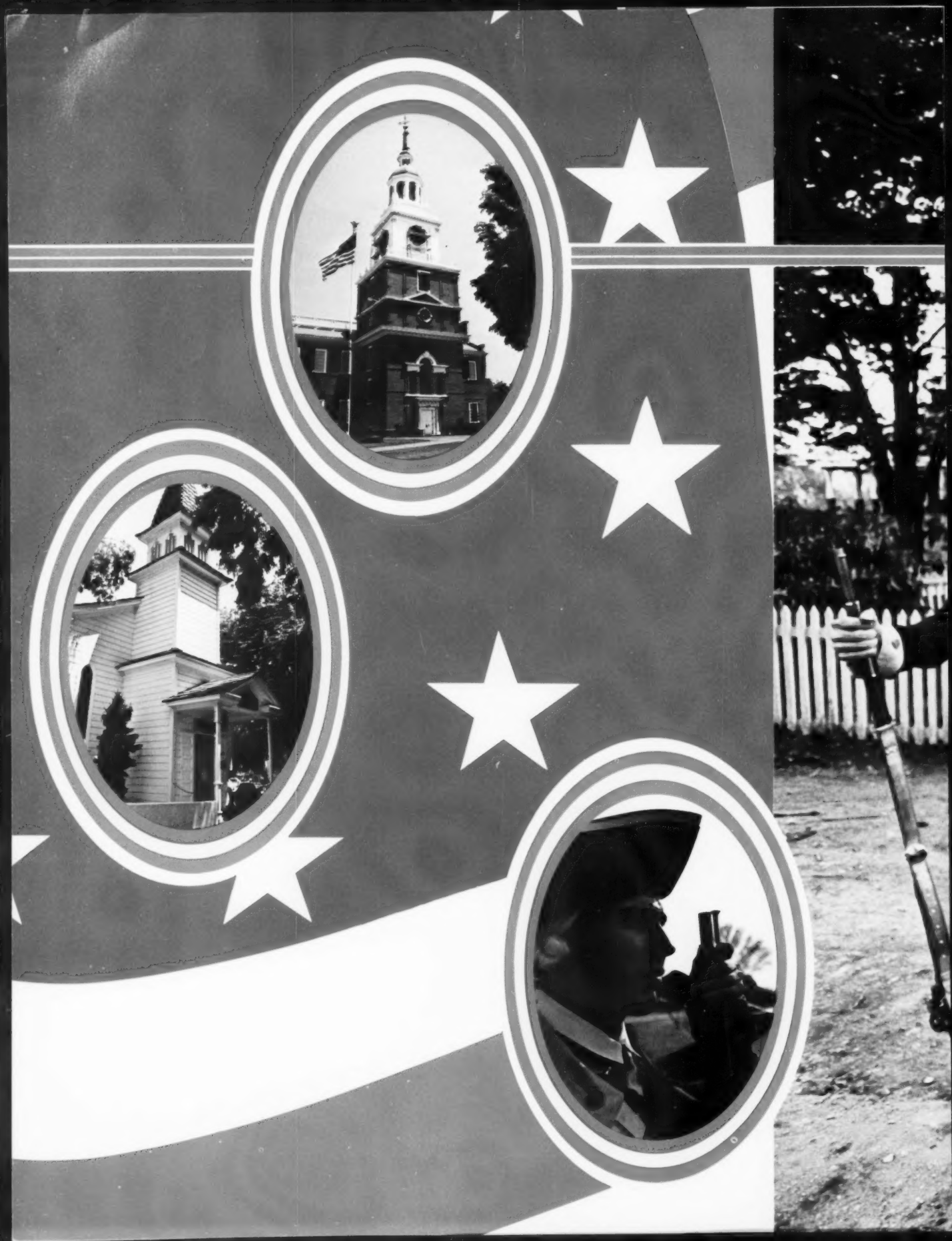
drive friendly

TEXAS GOVERNOR'S OFFICE OF TRAFFIC SAFETY

The DRIVERS

What better way to celebrate our Nations' Bicentennial than by taking a quiet drive to Valley Forge? Amn Sandy Smith (left) and Sgt June Irby (right) talk to Sp/4 John W. Mason about driving on the East Coast this busy summer. They know traffic will be heavy at all the historical spots and that extra travel time must be scheduled.

People traveling in the Delaware, Maryland, and Virginia areas should read the article on page 4. A lot of the tips apply to Boston and Philadelphia, too.

Sandy, June and John say, "Take care, take time, and have a happy summer."

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